TITAN-300 User Manual

APLEX Palm-size System
Intel ATOM (Apollo Lake) Platform

Release Date	Revision
Aug 2023	V1.2

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Revision History

Reversion	Date	Description
1.0	2020/12/21	Official Release
1.1	2021/06/01	1. To renew Chapter 2. 2. To add TB-591 pin definition
1.2	2023/08/14	Ch1 Specification modify

Warning!

This equipment will generate, use and radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user with its own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Packing List

Accessories (as ticked) included in this package are:
☐ Adaptor ☐ Driver & manual CD disc ☐ Other._____(As specified)

Safety Precautions

Follow the messages below to prevent your systems from damage:

- Avoid your system from static electricity on all occasions.
- Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
- Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

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Chapter 1 Getting Started

1.1 Features

- Intel Celeron N3350 Processor
- 1 x DDR3L SO-DIMM, up to 8GB
- 1 x Display Port 1.2 support
- 1 x USB Type-C ALT-mode support
- 2 x LAN, 2 x USB3.1, 1 x USB2.0
- 2 x RS-232/422/485 DB9 (COM1/2)
- 1 x mSATA for SSD storage, 1 x Micro SD socket for Storage
- Mounting kit design for both DIN-rail and Wall-mount
- DC 9~36V Wide-voltage Input

1.2 Specifications

	Titan-300
System	
CPU	Intel Celeron N3350 Processor *N4200 for option
Graphic	Intel® HD Graphic 500
Memory	1 x DDR3L SO-DIMM slot, up to 8GB
Outside IO Port	
Default I/O Ports	2 x USB 3.1 Gen.1 Type A 1 x USB2.0 Type A 2 x GbE LAN RJ-45 (Intel i210/i211) 1 x DP 1.2 port 1 x USB Type-C ALT mode
Storage Space	
Storage	1 x mSATA (SATA3) slot for SSD storage 1 x Micro SD Card slot
Expansion	
Expansion Slot	1 x full-size mPCIe (PCIe x 1+USB2.0) with 1x micro-SIM socket, and 1 x SMA connector for Wi-Fi/LTE/BT/GPS options via TB-591
	2x COMs (DB9, RS-232/422/485, COM1 w/o power, COM2 with power 1A) via TB-591
Power	
Power Input	9~36V DC (3-pin Terminal Block) 1 x Power Button with LED light

Power Consumption	33W
Switch	
SMA	Optional for Wi-Fi/LTE/GPS/BT Antenna
Misc	
Misc	1 x TPM2.0 1 x Watchdog Timer (256 steps)
Mechanical	
Construction	Aluminum Alloy heat sink and plastic chassis
Mounting	Compound with DIN-rail and Wall-mount
Dimensions	140 x 120 x 42 mm (HxWxD)
Net Weight	1.5Kg
Environmental	
Operating Temperature	0~50°C/ WT1 -20~60°C for option
Storage Temperature	-40~85°C
Relative Humidity	10 to 90%, non-condensing
Storage Humidity	10 to 90% @ 40°C, non-condensing
Vibration	1Grms/5~500Hz operating 3Grms/5~500Hz non-operating
Shock	Half-Sine 30G 2ms operating Half-Sine 40G 10ms non-operating
Drop	90cm (1 corner, 3edges, 6 surfaces, Full packing)
Certification	CE / FCC
Operating System	Microsoft® Win10 IoT, Linux 4.20.2

1.3 Dimensions

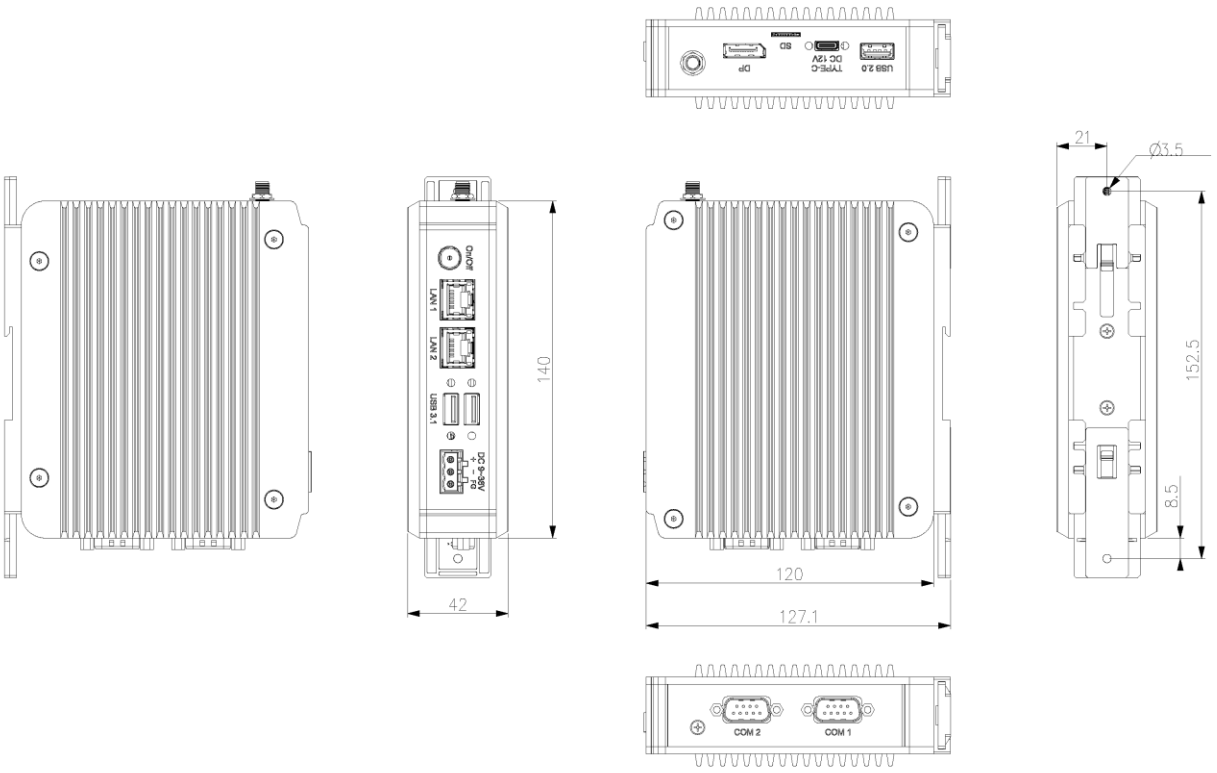


Figure 1.1: Dimension of TITAN-300

1.4 Brief Description of TITAN-300

TITAN-300 is designed with Fan-less CPU, the powerful Intel Celeron N3350 processor, and it supports 1 x 204-pin DDR3L SO-DIMM up to 8GB memory. It comes with 2 x USB 3.1 Type A, 1 x USB 2.0 Type A, 2 x LAN, 1 x DP, 1 x SD Card socket, 1 x mSATA socket, 1 x USB Type C, 1 and 1 x mPCIE with 1 x micro SIM socket for expansion. TITAN-300 can also supports (1.) 2 x COM ports, (2.) 2 x USB 2.0, (3.) 2 x CAN, (4.) 8 x GPIO, (5.) 2 x LAN, or (6.) 3 x RS-232 as options. It is plating titanium metal aluminum heat-sink design, and can be DIN-rail and Wall-mount fitted. TITAN-300 works well with our product family and can provide an easy way of maintenance.

Figure 1.2: Appearance of TITAN-300

Chapter 2 Hardware

2.1 Motherboard Introduction

Titan-300 motherboard, the CMI-AI103 is developed based on Intel Apollo Lake platform, which provides good performance to meet the needs of different customers. Also, it features dual GbE ports, 1 x DP interface, 1x mPCIe expansion to satisfy the special needs of some customers; the Apollo Lake platform is widely used in various sectors of industrial control.

2.2 Specifications

Specifications	
Board Size	100mm x 122mm
CPU Type	Intel Celeron N3350(Dual-core/1.1GHz/6W TDP) Intel Pentium N4200(Quad-core/1.1GHz/6W TDP) Option
Chipset	Onboard SOC
Memory Support	1 x DDR3L SO-DIMM socket, up to 8GB 1866MHz
Graphics	Intel® HD Graphics 505 (N4200)/ 500 (N3350)
Display Mode	1 x DP 1.2 1 x USB Type-C ALT-mode Interface
Storage	1 x mSATA slot 1 x Micro SD Slot
Ethernet	2 x PCIe GbE LAN, RJ45 via Intel I210AT
USB	2 x USB 3.1/1.0 stack ports for external 1 x USB 2.0
Battery	Support CR2477 Li battery
Power Input	DC 9~36V in via 3-pin Connector (input)
Expansions	2 x1.27mm Pitch 2X10 Female Header Provide 2xUART,PCIex1,USB2.0,SMBus,5V,3.3V,1.5V,GND
Temperature	Operating: -20℃to 70℃ Storage: -40℃ to 85℃
Humidity	10% - 90%, non-condensing, operating

2.3 Jumpers and Connectors Location

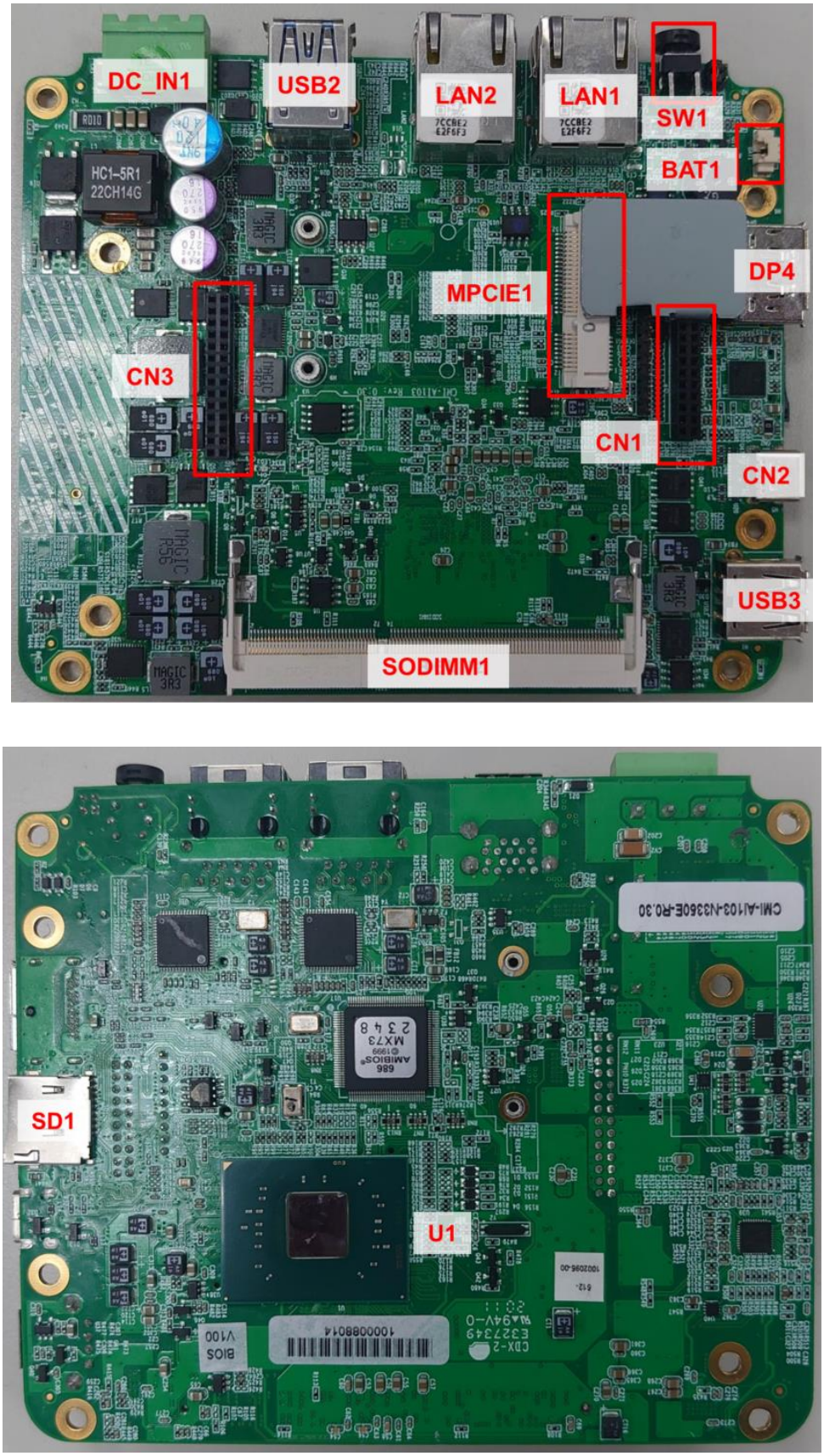


Figure 2.1: CMI-AI103 Jumpers and Connectors Location- Board Top and Bottom

2.4 Jumpers Setting and Connectors

2.4-1 CMI-AI103

1. U1:

(FCBGA1090), Onboard Pentium N4200/Celeron N3350 processors

2. DIMM Socket:

Signal channel DDR3L memory

Model	Memory
CMI-AI103	8GB Maximum

3. BAT1:

(1.25mm Pitch 1x2 Wafer Pin Header, SMD) 3.0V Li Battery is embedded to provide power for CMOS. CMOS clear operation will permanently reset old BIOS settings to factory defaults.

Pin#	Signal Name
Pin1	Battery 3V
Pin2	Battery 0V

Procedures of CMOS clear:

a) Turn off the system and unplug the power cord from the power outlet.

b) Remove the lithium battery connection from BAT1 for 10 seconds, and then connect it.

c) Power on the system again.

d) When entering the POST screen, press the <ESC> or <DEL> key to enter CMOS Setup Utility to load optimal defaults.

e) After the above operations, save changes and exit BIOS Setup.

3. SD1:

Micro SD socket

4. MPCIE1 (miniPCI express/mini SATA):

(50.95mm x 30mm Socket 52Pin), Mini PCI express socket. Support mini-PCIe (full size) devices with PCIex1, USB2.0, LPC and SMbus.

Function	Support
Mini SATA(Signal share with SATA2)	◯(Option, S_1 setting)
Mini PCIe	●(Default, S_1 setting)
SM bus	●
USB2.0	●

5. DC_IN1:

(5.08mm Pitch 1x3 Pin Connector),DC 9V~36V System power input connector.

Pin#	Power Input
Pin1	DC_IN+(DC+9V~36V)
Pin2	GND
Pin3	FG

6. SW1:

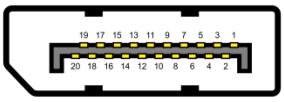
Power on/off button: Use to connect external power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state. P_SW1 or BT1 need to be selected before manufacturing.

(2.0mm Pitch 1x2 Wafer Pin Header), Power on/off button, used to connect power switch button

P_BT	Function
Bottom	● (Default)

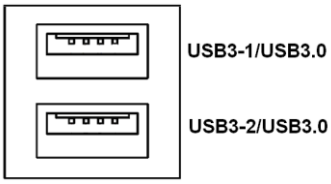
7. DP4:

Display port 20P Connector, support DP 1.2.



8. USB2:

USB3-1/USB3-2：(Double stack USB type A), Rear USB connector, it provides up to two USB3.0 ports, High-speed USB 2.0 allows data transfers up to 480 Mb/s, USB 3.0 allows data transfers up to 5.0Gb/s, support USB full-speed and low-speed signaling.



Each USB Type A Receptacle (2 Ports) Current limited value is 2.0A.

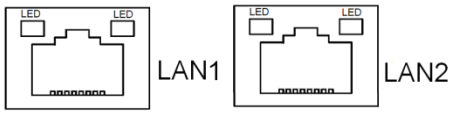
If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

9. USB3:

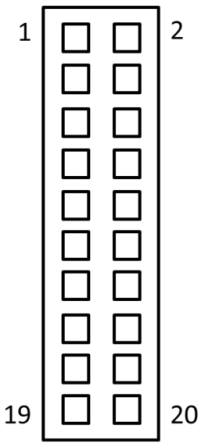
Standard USB 2.0 type A connector.

10. LAN1/LAN2:

LAN1/LAN2: (RJ45 Connector), Rear LAN port, Two standard 10/100/1000M RJ-45 Ethernet ports are provided. Use Intel 82574L chipset, LINK LED (green) and ACTIVE LED (green or orange) respectively located at the left-hand and right-hand side of the Ethernet port indicate the activity and transmission state of LAN.



11. CN1:

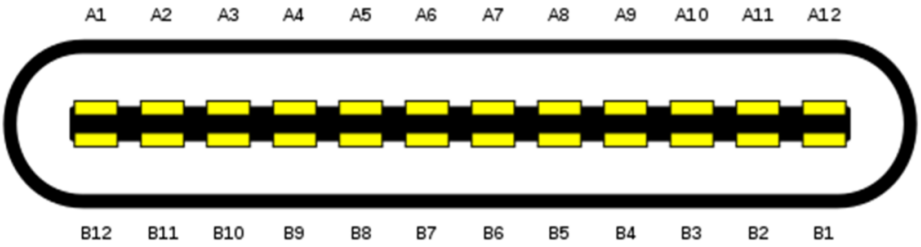


CN1
Female BOX Header 2x10

Pin#	Pin definition	Pin#	Pin definition
Pin1	5V+	Pin2	PCIE0 CLK-
Pin3	USB0 D-	Pin4	PCIE0 CLK+
Pin5	USB0 D+	Pin6	PCIE0 TX+
Pin7	GND	Pin8	PCIE0 TX-
Pin9	GND	Pin10	PCIE0 RX+
Pin11	GND	Pin12	PCIE0 RX-
Pin13	3.3V+	Pin14	PCIE0 WAKE
Pin15	3.3V+	Pin16	PCIE0 SMCLK
Pin17	USB2 D-	Pin18	PCIE0 SMDAT
Pin19	USB2 D+	Pin20	PCIE0 PERST

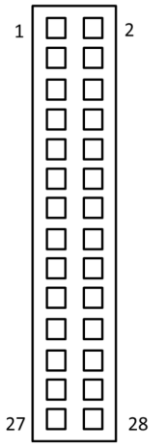
12. CN2:

USB Type-C connector.



Pin#	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
Pin def.	GND1	SSTXp1	SSTXn1	VBUS_A1	CC1	Dp1_A	Dn1_A	SBU1	VBUS_A2	SSTXn2	SSTXp2	GND2
Pin#	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Pin def.	GND4	SSTXp1	SSTXn1	VBUS_B1	SBU2	Dn1_A	Dp1_A	CC2	VBUS_B2	SSTXn2	SSTXp2	GND3

13. CN3:

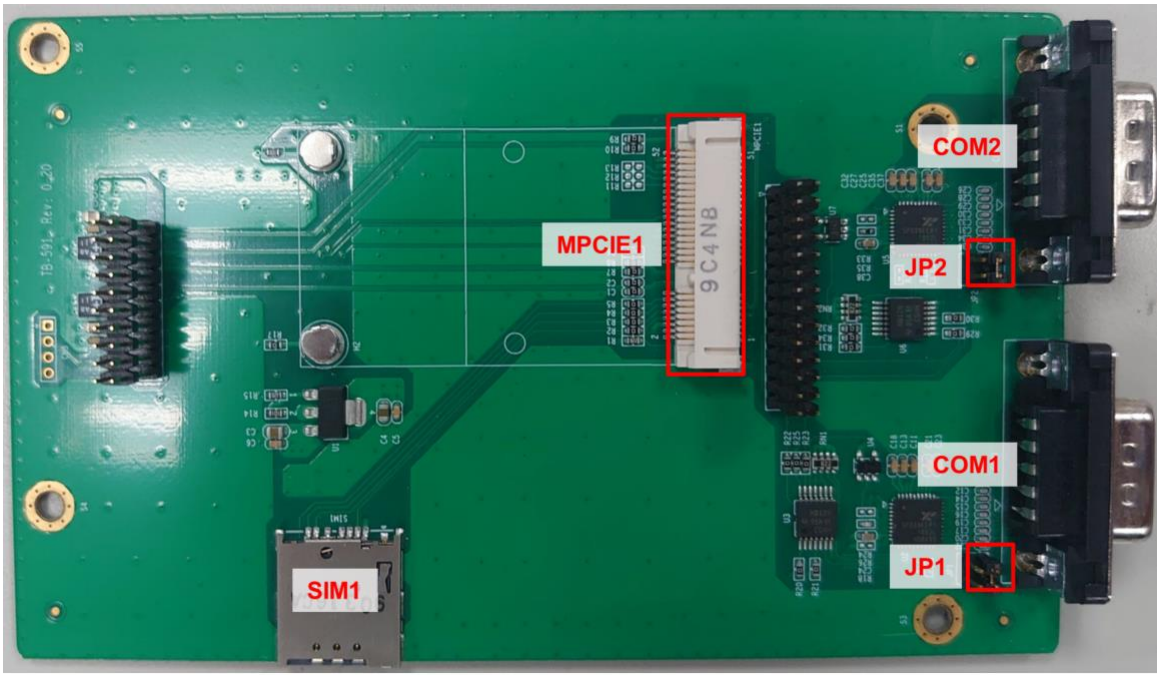


CN3

Female BOX Header 2x14

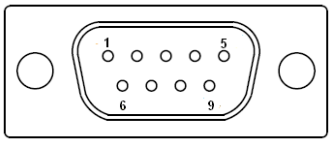
Pin#	Pin definition	Pin#	Pin definition
Pin1	COM2_CDC	Pin2	COM1_DCD
Pin3	COM2_TXD	Pin4	COM1_TXD
Pin5	COM2_RXD	Pin6	COM2_RXD
Pin7	COM2_DTR	Pin8	COM1_DTR
Pin9	GND	Pin10	GND
Pin11	COM2_DSR	Pin12	COM1_DSR
Pin13	COM2_RTS	Pin14	COM1_RTS
Pin15	COM2_CTS	Pin16	COM1_CTS
Pin17	COM2_RI	Pin18	COM1_RI
Pin19	N/A	Pin20	N/A
Pin21	GPIO	Pin22	GPIO
Pin23	GPIO	Pin24	GPIO
Pin25	GPIO	Pin26	GPIO
Pin27	GPIO	Pin28	GPIO

2.4-2. TB-591:



1. COM1/2 (TB-591) :

(Type DB9),Rear serial port, standard DB9 Male serial port is provided to make a direct connection to serial devices. COM1/2 ports are controlled by pins No.1~6 of JP1 and JP2, select output Signal RI or 5V or 12V, for details, please refer to description of JP1/2 setting.



Pin#	Signal (RS-232)	Signal (RS-422)	Signal (RS-485)
1	DCD	TX-	Data-
2	RXD	TX+	Data+
3	TXD	RX+	
4	DTR	RX-	
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	5V/Ring		

2. JP1/2 (TB-591) :

Jumper	COM1/2 Pin9 Function
1-2(Default)	Ring
3-4	5V

Chapter 3 BIOS Setup

3.1 Operations after POST Screen

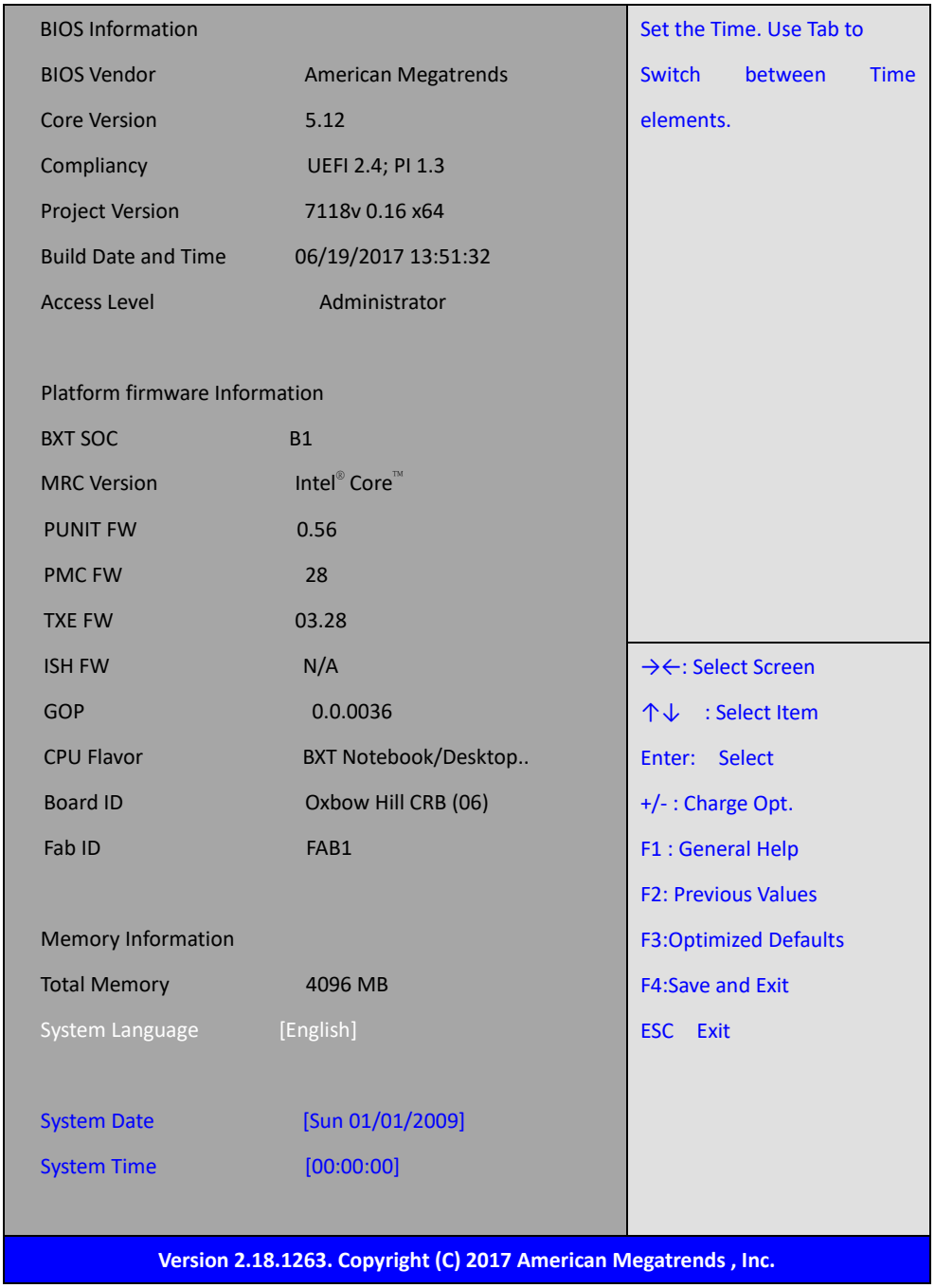
After CMOS discharge or BIOS flashing operation, press [Delete] key to enter CMOS Setup.

After optimizing and exiting CMOS Setup

3.2 BIOS Setup Utility

Press [Delete] key to enter BIOS Setup utility during POST, and then a main menu containing system summary information will appear.

3.3 Main Settings



System Time:

Set the system time, the time format is:

Hour : 0 to 23

Minute : 0 to 59

Second : 0 to 59

System Date:

Set the system date, the date format is:

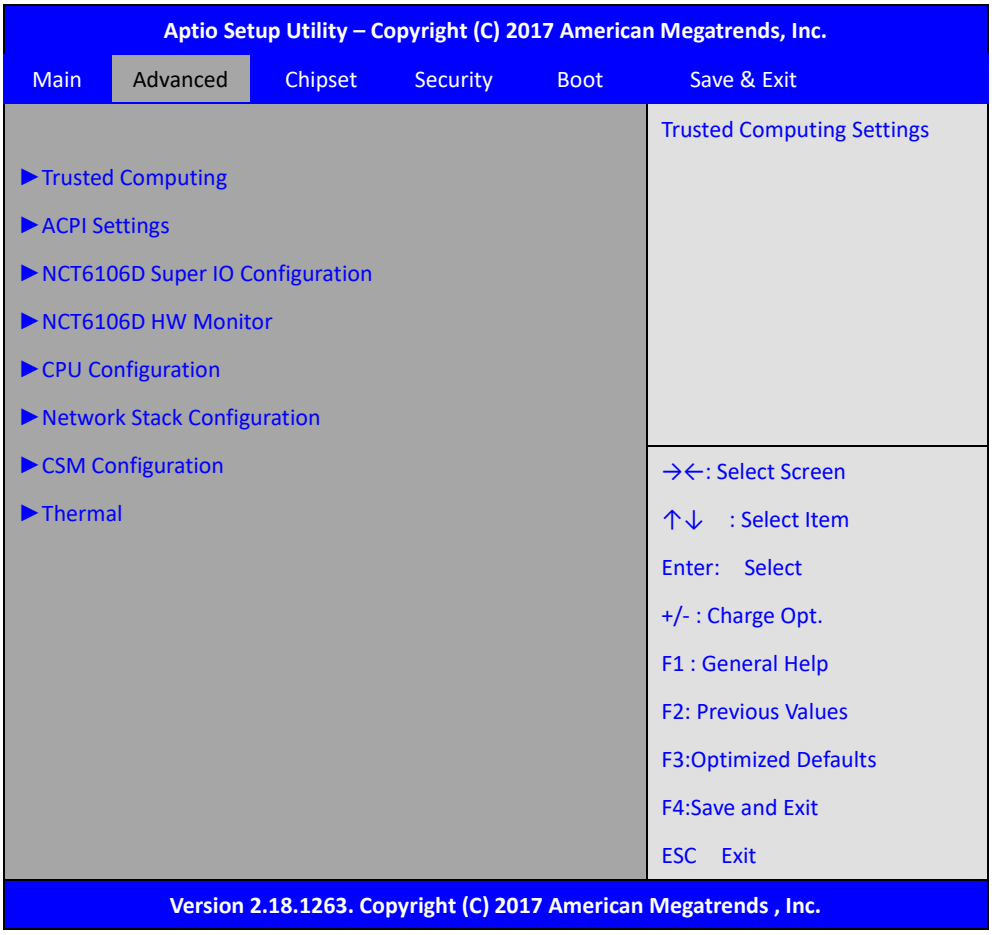
Day: Note that the 'Day' automatically changes when you set the date.

Month: 01 to 12

Date: 01 to 31

Year: 1998 to 2099

3.4 Advanced Settings



3.4.1 Trusted Computing

Security device Support	[Enabled]
SHA-1 PCR Bank	[Enabled]
SHA256 PCR Bank	[Enabled]
Pending operation	[None]
	[TPM Clare]
Platform Hierarchy	[Enabled]
Storage Hierarchy	[Enabled]
Endorsement Hierarchy	[Enabled]
Tpm2.0 UEFI Spec Version	[TCG_2]
	[TCG_1_2]
Physical Presence Spec Version	[1.3]
	[1.2]
TPM 20 Interface type	[TIS]
Device Select	[Auto]
	[TPM1.2]
	[TPM2.0]

3.4.2 ACPI Settings

Enable ACPI Auto Configuration:

[Disabled]

[Enabled]

Enable Hibernation:

[Enabled]

[Disabled]

ACPI Sleep State:

[S3 (Suspend to RAM)]

[Suspend Disabled]

Lock Legacy Resources:

[Disabled]

[Enabled]

3.4.3 NCT6106D Super IO Configuration

Super IO Chip NCT6106D

Serial Port 1 Configuration

Serial port **[Enabled]**

[Disabled]

Device Settings IO=3F8h； IRQ=4；

Change Settings **[Auto]**

F75111 COM1 Config

[RS-232 Mode]

[RS-485 Mode]

[RS-422 Mode]

Serial Port 2 Configuration

Serial port **[Enabled]**

[Disabled]

Device Settings IO=2F8h； IRQ=3；

Change Settings **[Auto]**

Serial Port 3 Configuration

Serial port **[Enabled]**

[Disabled]

Device Settings IO=3E8h； IRQ=7；

Change Settings **[Auto]**

Serial Port 4 Configuration

Serial port **[Enabled]**

[Disabled]

Device Settings IO=2E8h； IRQ=7；

Change Settings **[Auto]**

Serial Port 5 Configuration

Serial port	**[Enabled]**
	[Disabled]
Device Settings	IO=2F0h； IRQ=7；
Change Settings	**[Auto]**
COM5 Config	**[RS-485 Mode]**
	[RS-422 Mode]
Serial Port 6 Configuration	
Serial port	**[Enabled]**
	[Disabled]
Device Settings	IO=2E0h； IRQ=7；
Change Settings	**[Auto]**
COM6 Config	**[RS-485 Mode]**
	[RS-422 Mode]

3.4.4 NCT6106D HW Monitor

Pc Health Status	
System temperature1	：+380℃
System temperature2	：+460℃
System temperature3	：+80 ℃
System temperature4	：N/A
System temperature5	：NA
System temperature6	：+380℃
Fan1 speed	：NA
Fan2 speed	：NA
Fan3 speed	：NA
VCORE	：+0.760 V
VIN0	：+6.441V
VIN1	：+6.864V
VIN2	：+8.870V
AVCC	：+3.456V
VSB3	：+3.440V
VCC3V	：+3.472V
VBAT	：+3.376V

3.4.5 CPU Configuration

CPU Configuration

Socket 0 cpu Information

Intel® Pentium® CPU N4200 @1.10GHz

CPU Signature	506C9
Microcode Patch	28

Max CPU Speed	1100 MHz
Mix CPU Speed	800 MHz
Processor Cores	4
Intel HT Technology	Not Supported
Intel VT-X Technology	Supported
L1 Date Cache	24KB x 4
L1 Code Cache	32KB x 4
L2 Cache	1024 KB x 2
L3 Cache	Not Present
Speed	1100 MHZ
64-bit	Supported
CPU Power Management	
EIST	[Enabled]
Turbo Mode	[Enabled]
Boot performance mode	[Max Performance]
Power Limit 1 Enable	[Disabled]
Active Processor Cores	[Disabled]
Intel Virtualization Technology	[Enabled]
VT-d	[Disabled]
Bi-directional PROCHOT	[Enabled]
Thermal Monitor	[Enabled]
Monitor Mwait	[Disabled]
P-STATE Coordination	**[HW_ALL]** [SW_ALL] [SW_ANY]
DTS	[Disabled]
Network Stack Configuration	
Network Stack	[Disabled]

3.4.6 CSM Configuration

CSM Support	[Enabled]
CSM16 Module Version	07.79
GateA20 Active	[Upon Request]
Option ROM Messages	[Force BIOS]
INT19 Trap Response	[Immediate]
Boot option filter	[UEFI and Legacy]
Option ROM execution	
Network	[Do not launch]
Storage	[Do not launch]
Video	[Legacy]

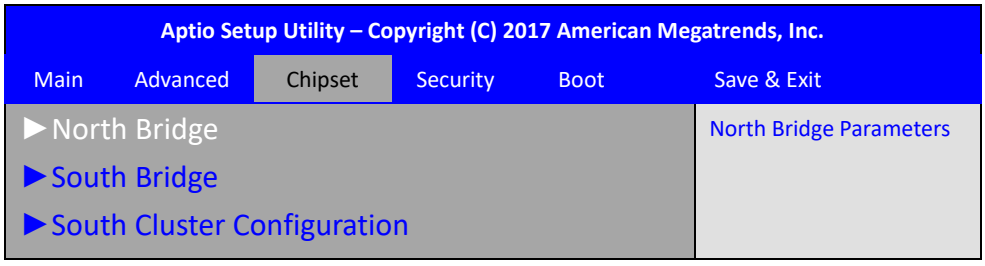
Other PCI devices	[Do not launch]

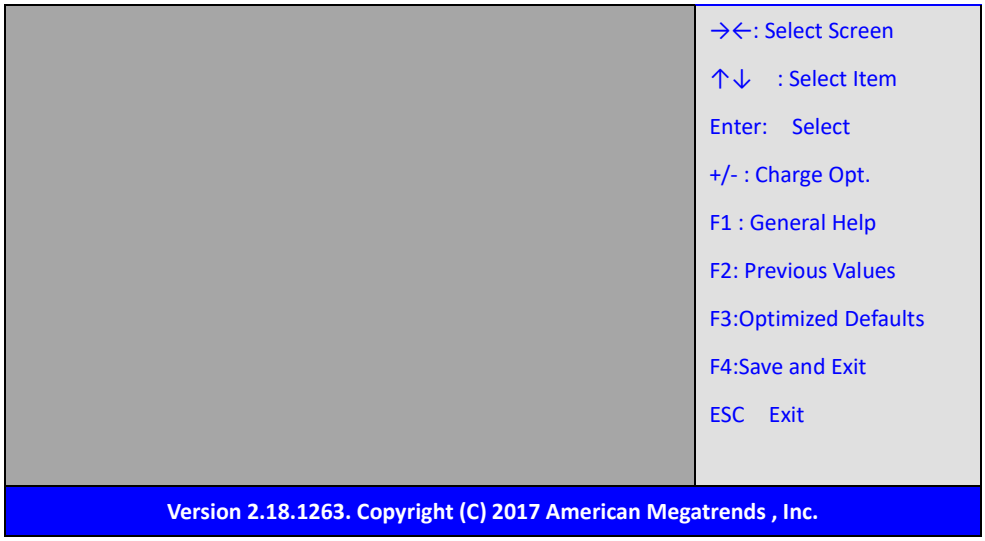
3.4.7 Thermal

Automatic Thermal Reporting	[Enabled]
DPTF	[Enabled]
DPTF Configuration	[0]
DPTF Processor	[Enabled]
Active Thermal Trip Point	90
Passive Thermal Trip point	100
S3/CS Thermal Trip Point	110
HOT Thermal Trip point	110
Critical Thermal Trip Point	105
Thermal Sampling Period	0
Display participant	[Enabled]
FAN Device	[Enabled]
Sensor Device 1	
Charger Participant	[Enabled]
Power participant	[Enabled]
Polling Rate	0
Generic Device 1	[Enabled]
Active Thermal Trip Point	60
Passive Thermal Trip point	65
S3/CS Thermal Trip Point	70
HOT Thermal Trip point	75
Critical Thermal Trip Point	80
Thermal Sampling Period	50
Generic Device 2	[Enabled]
Active Thermal Trip Point	60
Passive Thermal Trip point	65
S3/CS Thermal Trip Point	70
HOT Thermal Trip point	75
Critical Thermal Trip Point	80
Thermal Sampling Period	50
Generic Device 3	[Enabled]
Active Thermal Trip Point	60
Passive Thermal Trip point	65
S3/CS Thermal Trip Point	70
HOT Thermal Trip point	75
Critical Thermal Trip Point	80
Thermal Sampling Period	50

	Generic Device 4	[Enabled]
	Active Thermal Trip Point	60
	Passive Thermal Trip point	65
	S3/CS Thermal Trip Point	70
	HOT Thermal Trip point	75
	Critical Thermal Trip Point	80
	Thermal Sampling Period	50
	Design Variable 0	0
	Design Variable 1	0
	Design Variable 2	0
	Design Variable 3	0
	Design Variable 4	0
	Design Variable 5	0
	Virtual Sensor participant 1	[Disabled]
	Virtual Sensor participant 2	[Disabled]
	Virtual Sensor participant 3	[Disabled]
DPTF Policies		
	Active Policy	[Enabled]
	Passive Policy	[Passive Policy 2.0]
	TRT Revision	[Priority]
	Critical Policy	[Enabled]
	Power Boss	[Enabled]
	Virtual Sensor	[Disabled]

3.5 Chipset Settings





3.5.1 North Bridge

LCD Control	
Primary IGFX Boot Display	[Auto]
IGD Flat Panel	[Auto]
Active LFP	[eDP Port-A]
GMCH BLC Control	[PWM-Normal
Panel Color	[8bit VESA]
Panel link	[Single link]
Memory Information	
Total Memory	8192 MB (LPDDR3)
Memory Slot0	2048 MB (LPDDR3)
Memory Slot1	2048 MB (LPDDR3)
Max TOLUD	[2 GB]
Above 4GB MMIO BIOS assignment	[Disabled]
Max TOLUD	[Disabled]

South Bridge

Serial IRQ Mode	[Continuous]
SMBus Support	[Enabled]
OS Selection	[Windows]
PCI CLOCK RUN	[Enabled]
State After G3	[S0 State]
South Cluster Configuration	
PCI Express Configuration	
PCI Express Clock Gating	[Enabled]
PCIE Port assigned to LAN	5
Port8xh Decode	[Disabled]
Peer Memory Write Enable	[Disabled]
Compliance Mode	

PCI Express Root Port 1
PCI Express Root Port 2
PCI Express Root Port 3
PCI Express Root Port 4
PCI Express Root Port 5
PCI Express Root Port 6
SATA Drives
Chipset-SATA Controller Configuration

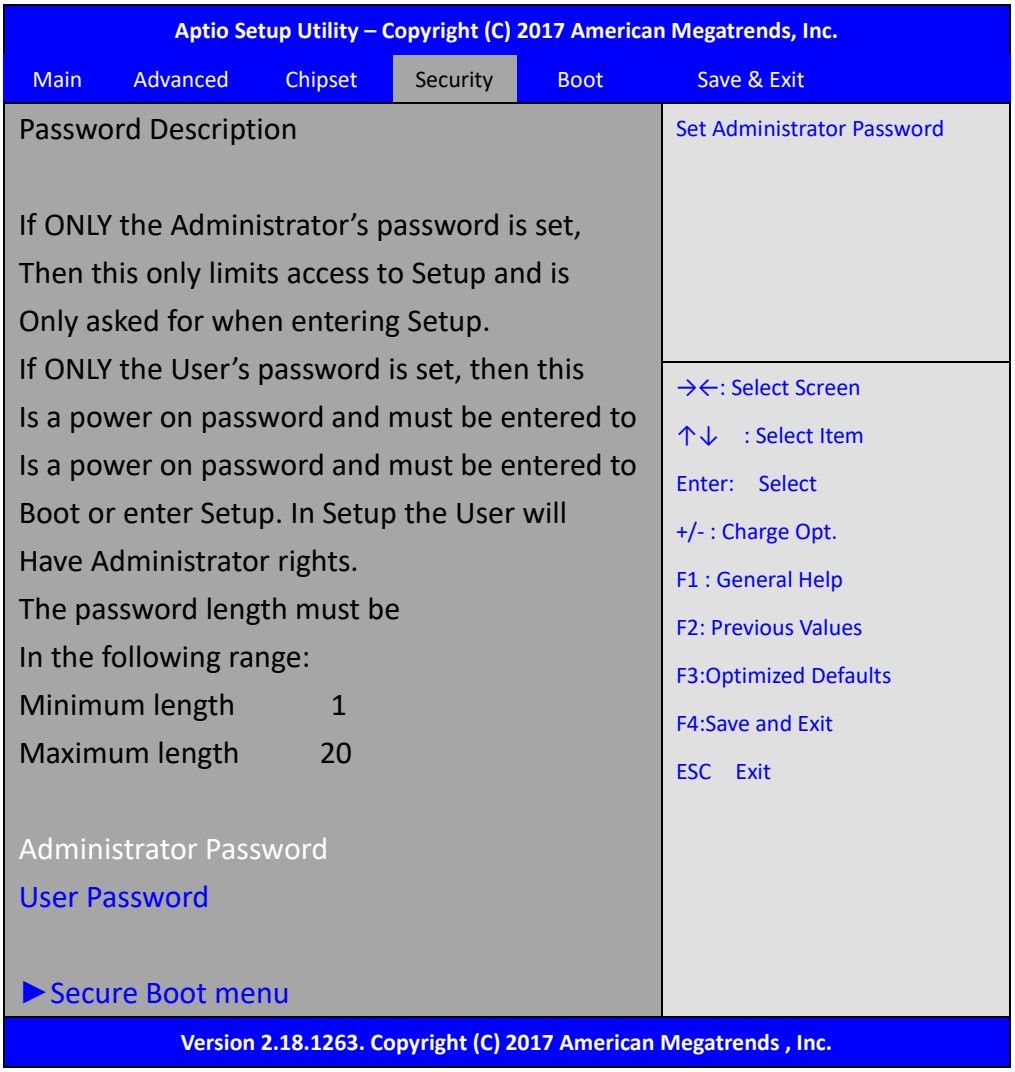
Chipset SATA	[Disabled]
SATA Mode Selection	[AHCI]
SATA Test Mode	[Disabled]
Aggressive LPM Support	[Enabled]
SATA Port 0	16GB SATA Flags (16.0GB)
Software Preserve	Unknown
Port 0	[Enabled]
SATA Port 0 Hot Plug Capability	[Disabled]
Configured as eSATA	Hot Plug supported
Mechanical Presence Switch	[Enabled]
Spin Up Device	[Disabled]
SATA Device Type	[Hard Disk Drive]
SATA Port 0 DevSlp	[Disabled]
DITO Configuration	[Disabled]
DITO Value	625
DM Value	15
SATA Port 0	[Not Installed]
Software Preserve	Unknown
Port 0	[Enabled]
SATA Port 0 Hot Plug Capability	[Disabled]
Configured as eSATA	Hot Plug supported
Mechanical Presence Switch	[Enabled]
Spin Up Device	[Disabled]
SATA Device Type	[Hard Disk Drive]
SATA Port 0 DevSlp	[Disabled]
DITO Configuration	[Disabled]
DITO Value	625
DM Value	15

SCC Configuration

SCC SD Card Support (D27:F0)	[Disabled]
SCC eMMC Support (D28:F0)	[Disabled]
SCC UFS Support (D29:F0)	[Disabled]

SCC SDIO	Support (D30:F0)	[Disabled]
USB Configuration		
XHCI Pre-Boot Driver		[Disabled]
XHCI Mode		[Disabled]
USB VBUS	Support	[ON]
USB HSIC1	Support	[Disabled]
USB SSIC1	Support	[Disabled]
USB Port Disable Override		[Disabled]
XDCI	Support	[Disabled]
XHCI Disable Compliance Mode		[FALSE]
Miscellaneous Configuration		
BIOS LOCK		[Enabled]

3.6 Security Settings



3.6.1 Setup Administrator Password

3.6.2 User Password

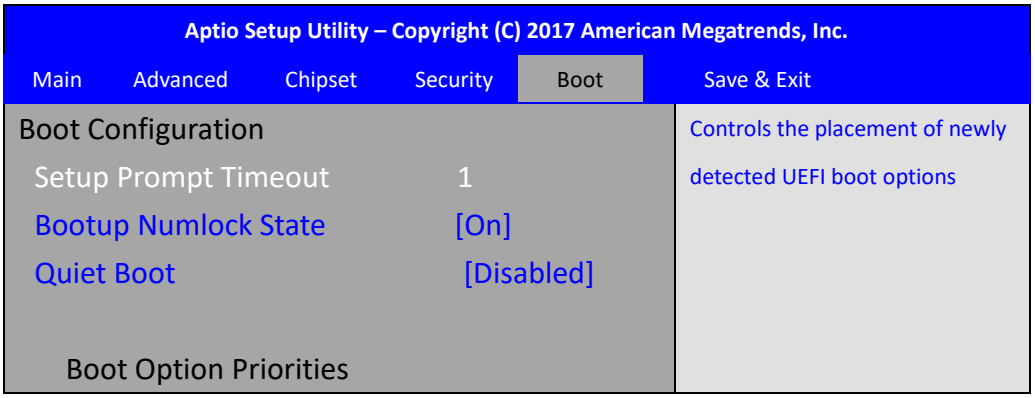
Type the password with up to 20 characters and then press ⮜Enter⮞ key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press ⮜Enter⮞ key. You may press ⮜Esc⮞ key to abandon password entry operation.

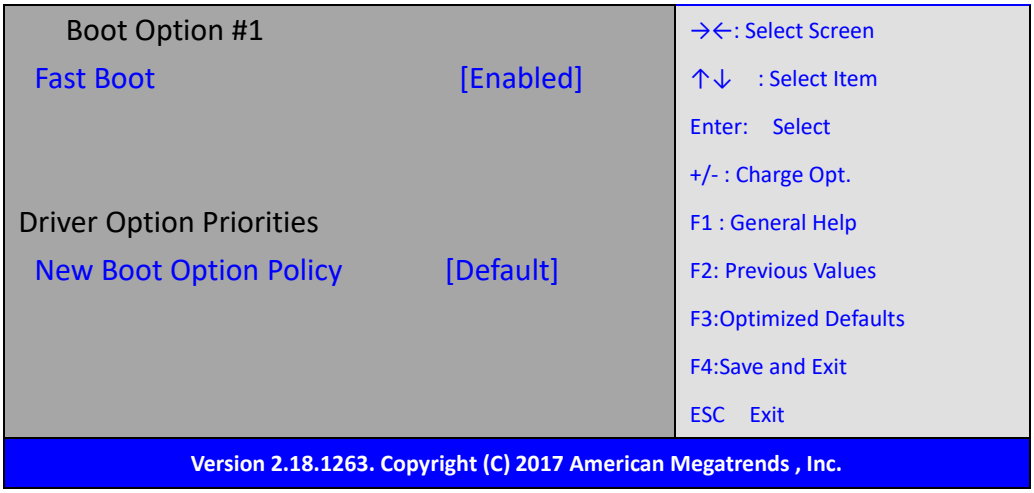
To clear the password, just press ⮜Enter⮞ key when password input window pops up. A confirmation message will be shown on the screen as to whether the password will be disabled. You will have direct access to BIOS setup without typing any password after system reboot once the password is disabled.

Once the password feature is used, you will be requested to type the password each time you enter BIOS setup. This will prevent unauthorized persons from changing your system configurations.

Also, the feature is capable of requesting users to enter the password prior to system boot to control unauthorized access to your computer. Users may enable the feature in Security Option of Advanced BIOS Features. If Security Option is set to System, you will be requested to enter the password before system boot and when entering BIOS setup; if Security Option is set to Setup, you will be requested for password for entering BIOS setup.

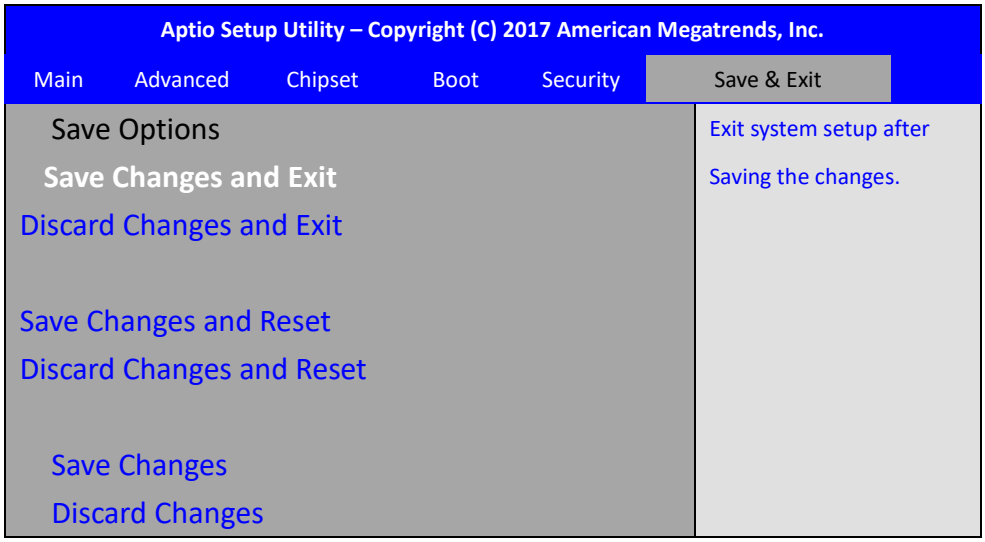
3.7 Boot Settings

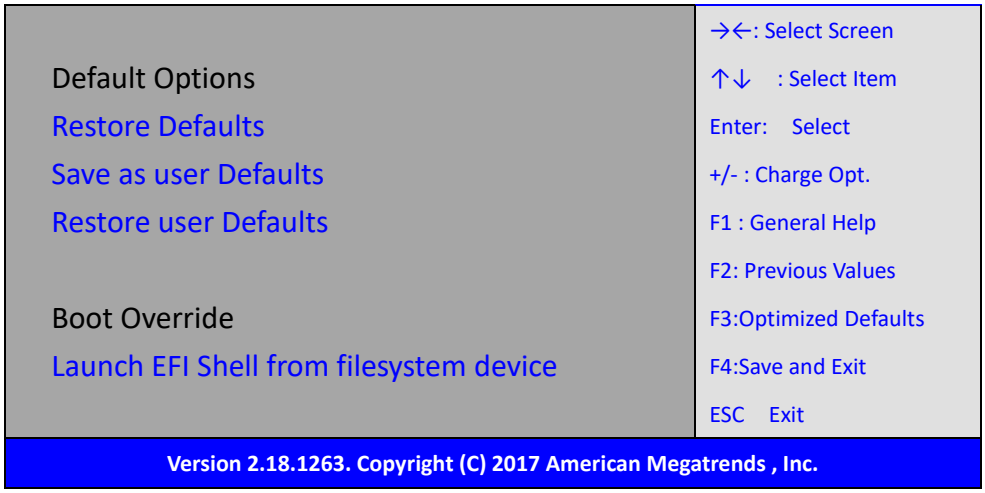




Setup Prompt Timeout	1
Bootup Numlock State	[On]
Quiet Boot	[Disabled]
Boot Option Priorities	
Fast Boot	[Disabled]
Driver Option Priorities	
New Boot Option Policy	[Default]

3.8 Save & Exit Settings





Save Changes and Exit

Save & Exit Setup save Configuration and exit ?

[Yes]

[No]

Discard Changes and Ext

Exit Without Saving Quit without saving?

[Yes]

[No]

Save Changes and Reset

Reset the system affer Saving The changes?

[Yes]

[No]

Discard Changes and Reset

Reset system setup without Saving any changes?

[Yes]

[No]

Save Changes

Save Setup done so far to any of the setup options?

[Yes]

[No]

Discard Changes

Discard Changes done so far to any of the setup options?

[Yes]

[No]

Restore Defaults

Restore /Load Defaults values for all the setup options?

[Yes]

[No]

Save as user Defaults

Save the changes done so far as User Defaults?

[Yes]

[No]

Restore user Defaults

Restore the User Defaults to all the setup options?

[Yes]

[No]

Boot Override

Launch EFI Shell from filesystem device

WARNING Not Found

[ok]

Chapter 4 Installation of Drivers

This chapter describes the installation procedures for software and drivers under Windows 10. The software and drivers are included with the motherboard. The contents include **Intel® Apollo Lake SoC Chipset, Intel® VGA chipset, Intel® I210 LAN Driver, Intel ® TXE, and DPTF Driver Installation instructions are given below.**

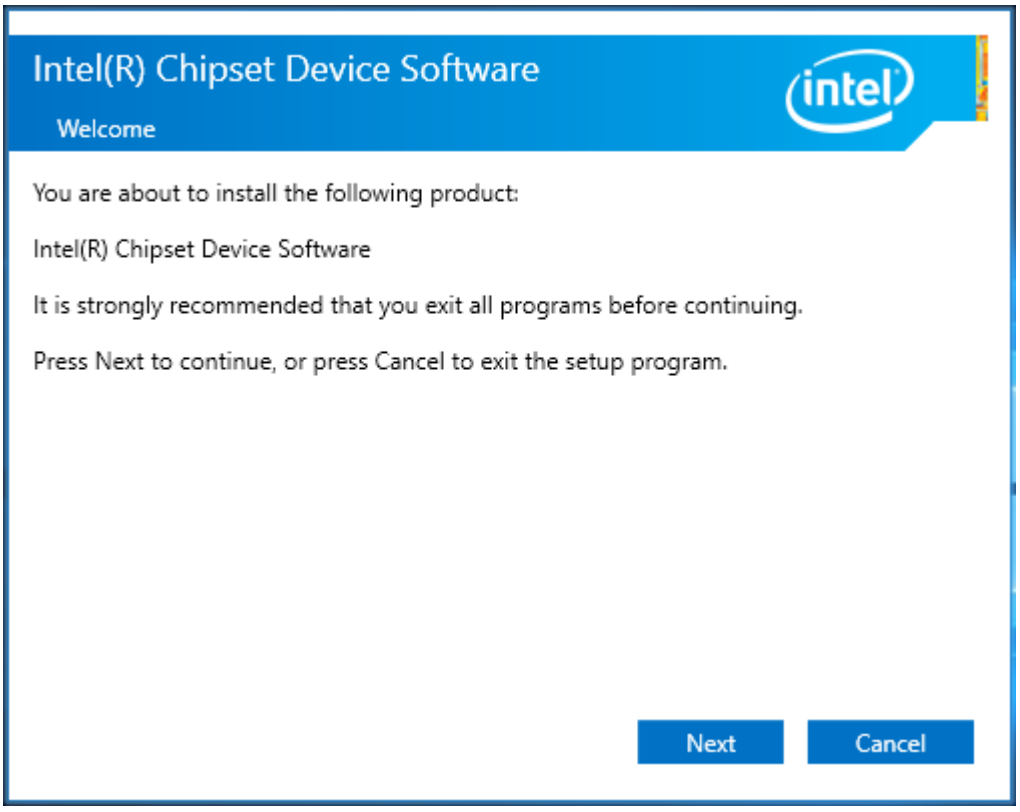
Important Note:
After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the installation of drivers.

4.1 Intel® Apollo Lake SoC Chipset

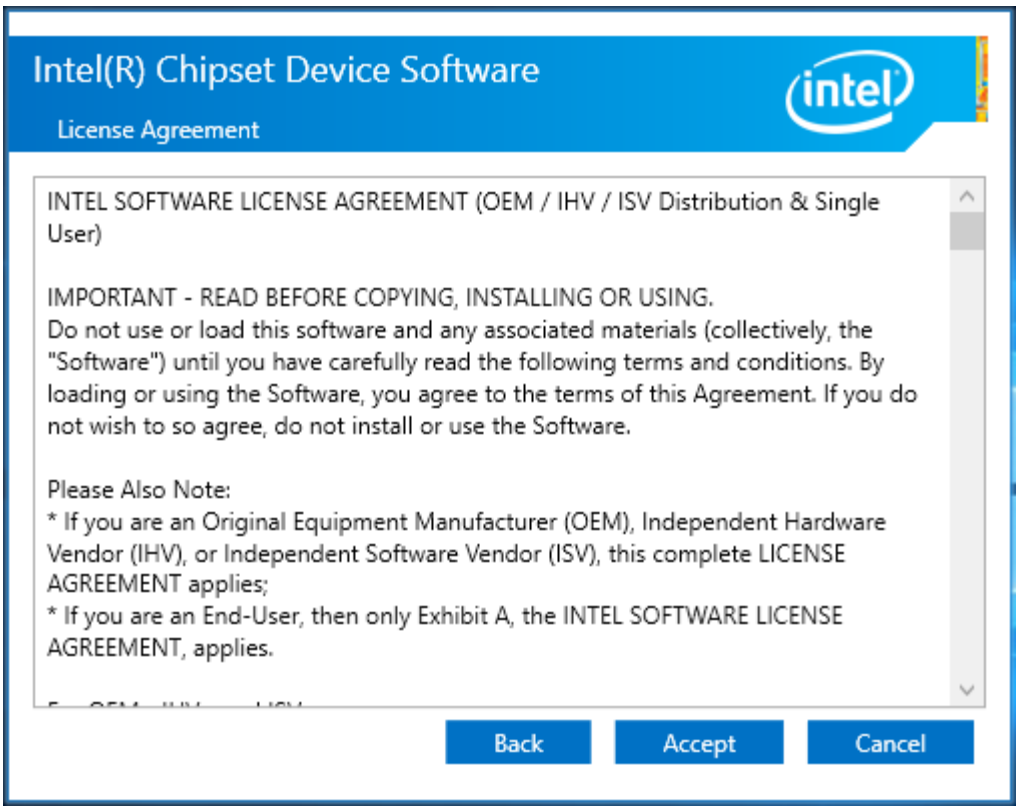
To install Intel® Apollo Lake SoC Chipset driver, please follow the steps below.

Step 1. Select **Intel® Apollo Lake SoC Chipset** from the list

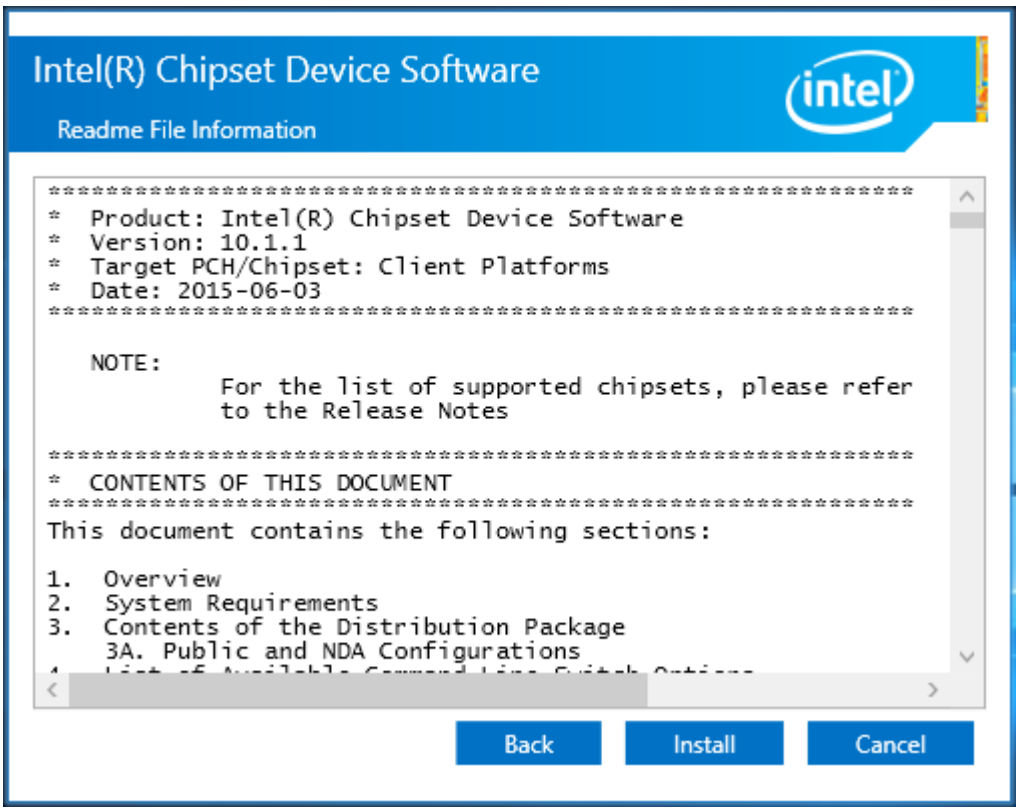
Step 2. Here is welcome page. Please make sure you save and exit all programs before install**.** Click **Next.**



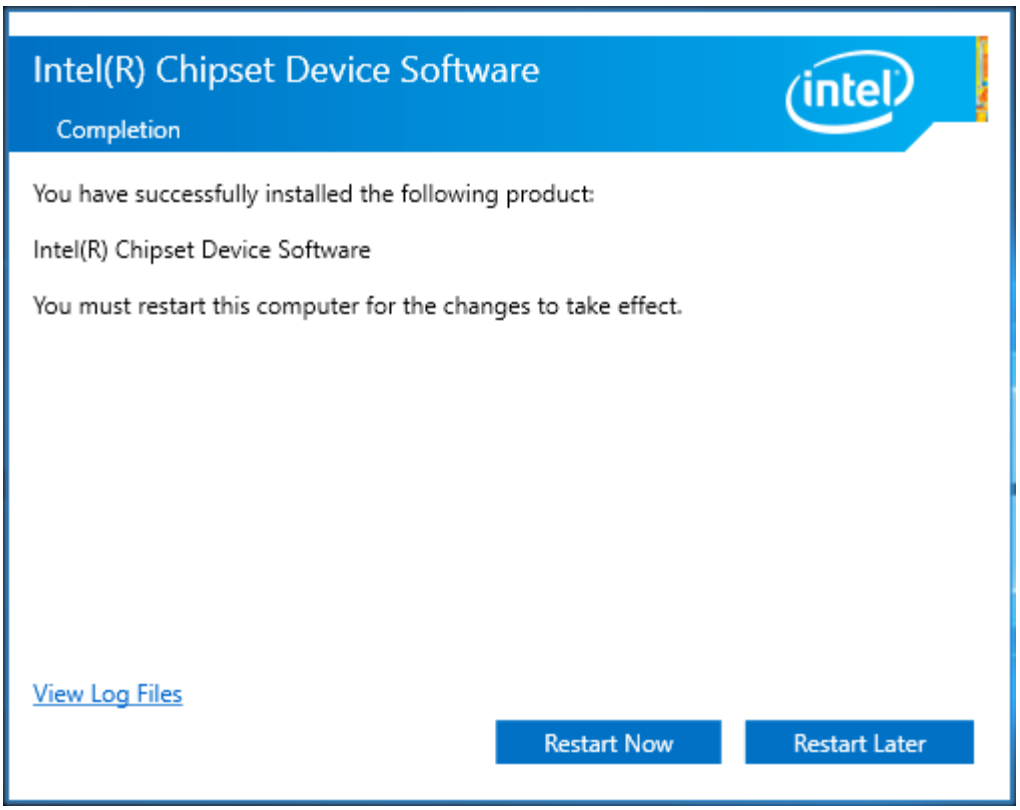
Step 3. Read the license agreement. Click **Accept** to accept all of the terms of the license agreement.



Step 4. Click **Install** to begin the installation.



Step 5. Select **Restart Now** to reboot your computer for the changes to take effect.

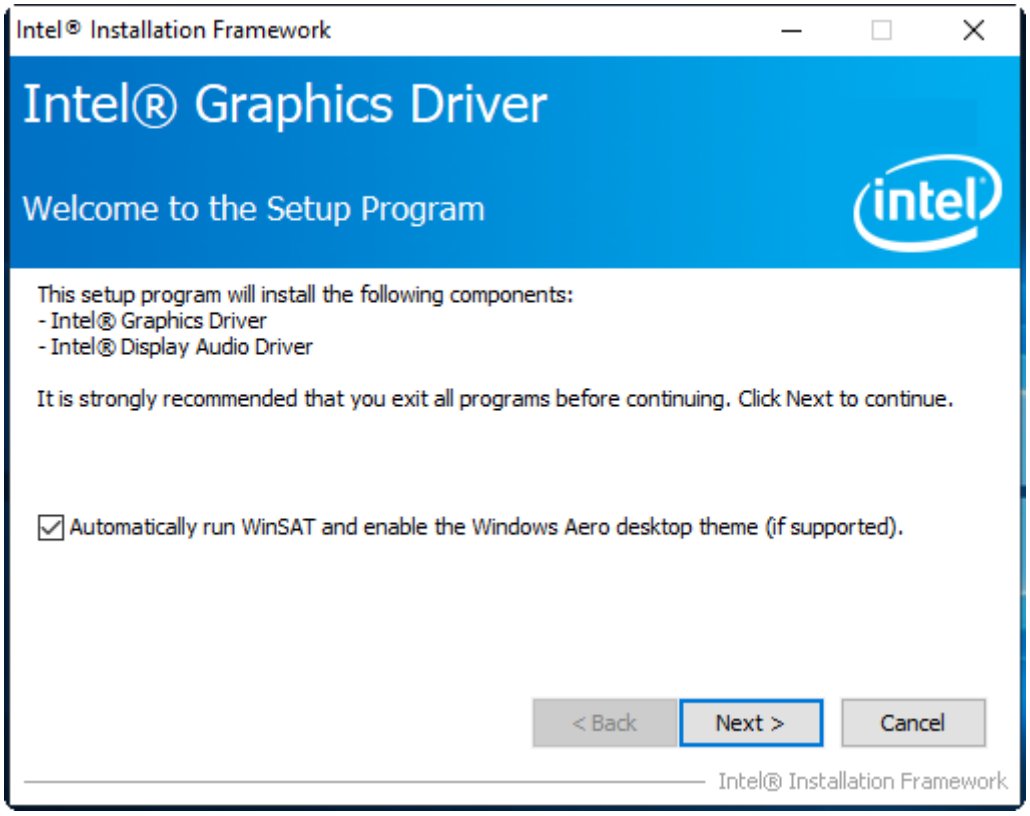


4.2 Intel® HD Graphics Chipset

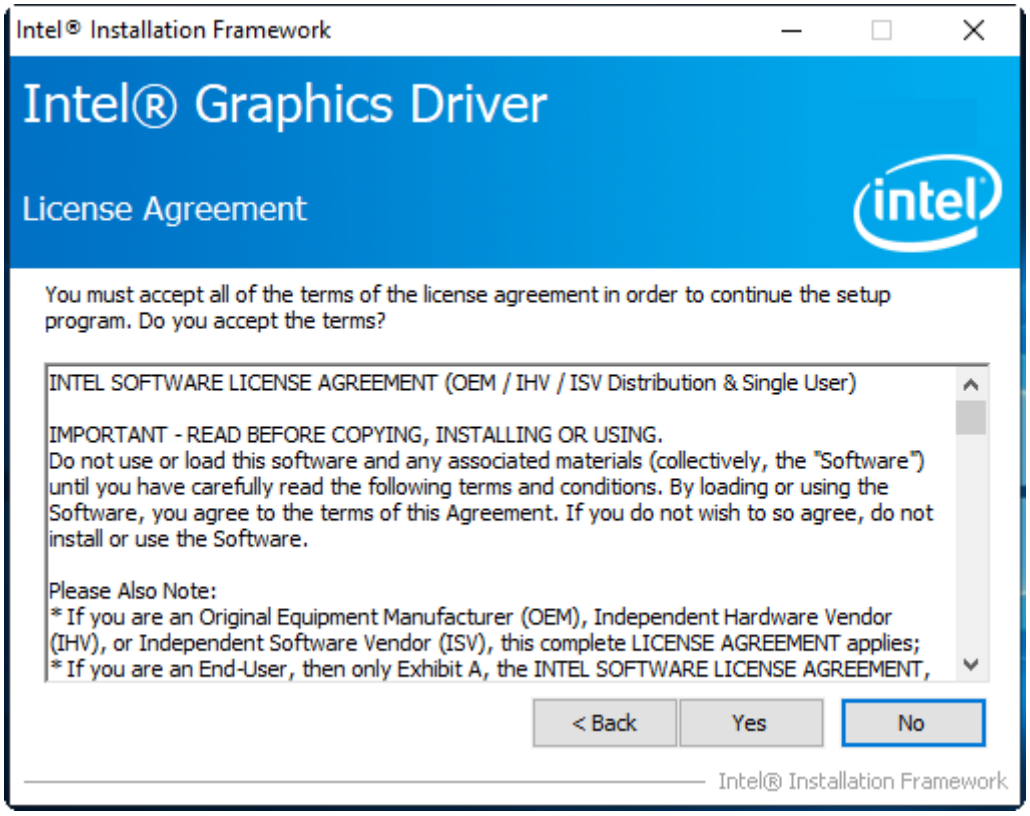
To install the Intel® VGA Chipset, please follow the steps below.

Step 1. Select **Intel® VGA Chipset** from the list**.**

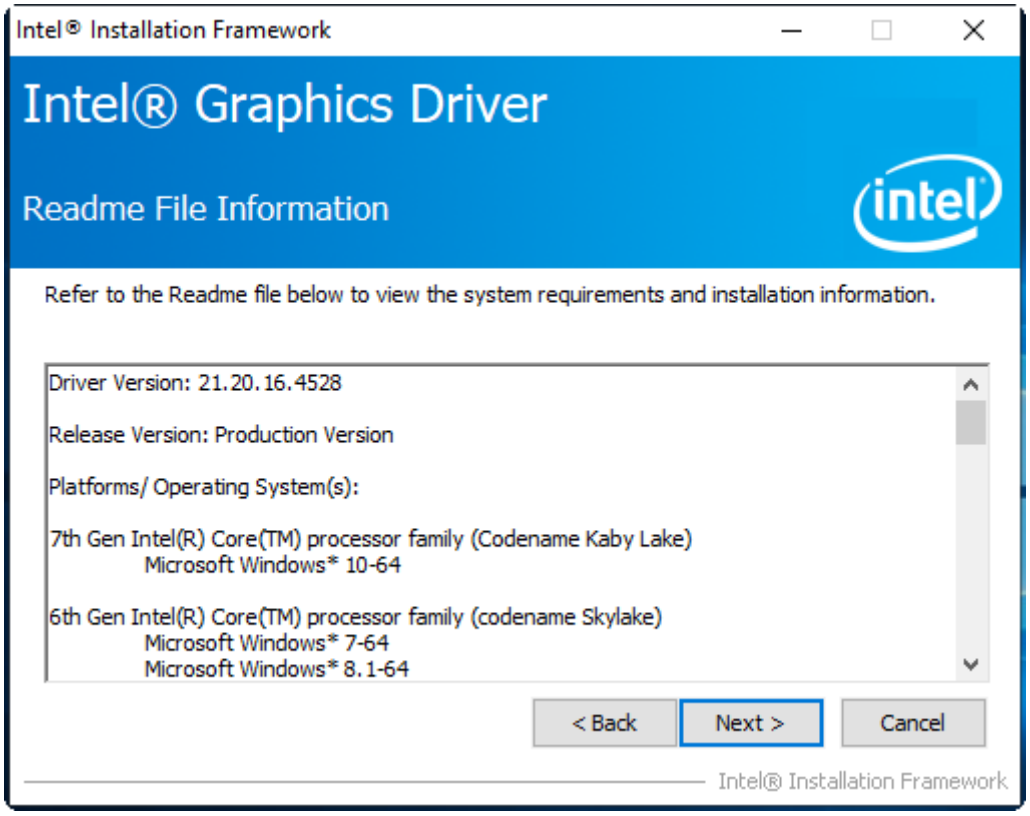
Step 2. Choose **automatically run** function and Click **Next** to setup program.



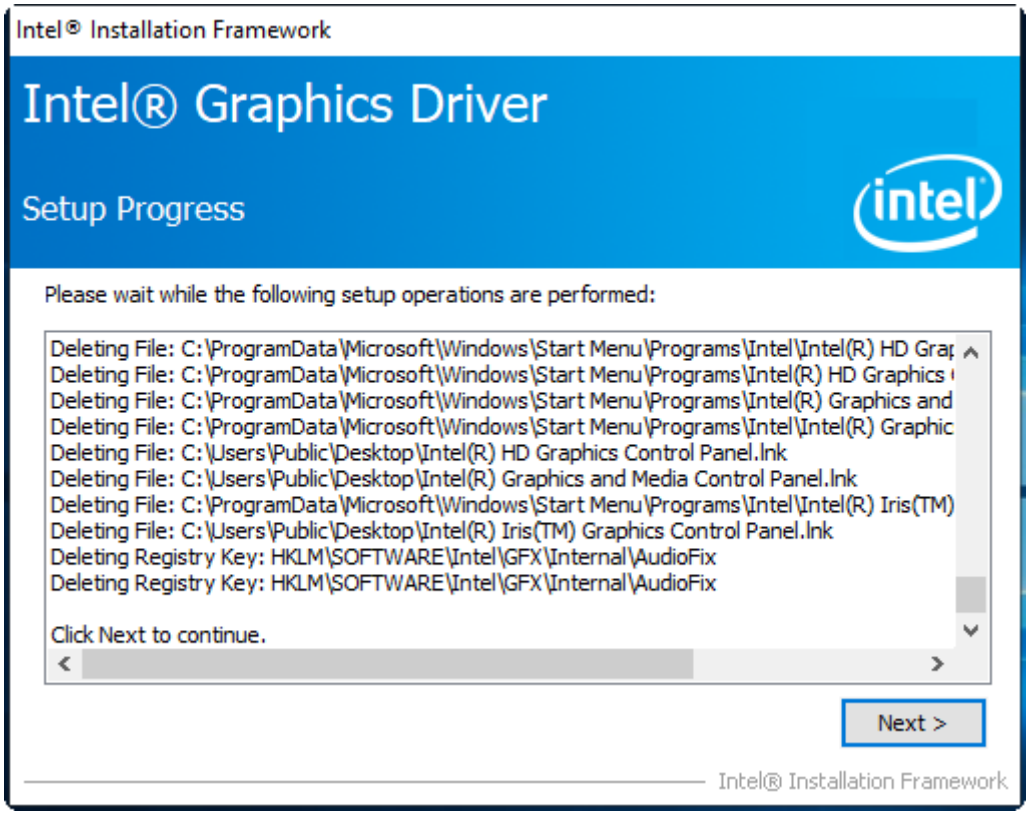
Step 3. Read the license agreement. Click **Yes** to accept all of the terms of the license agreement.



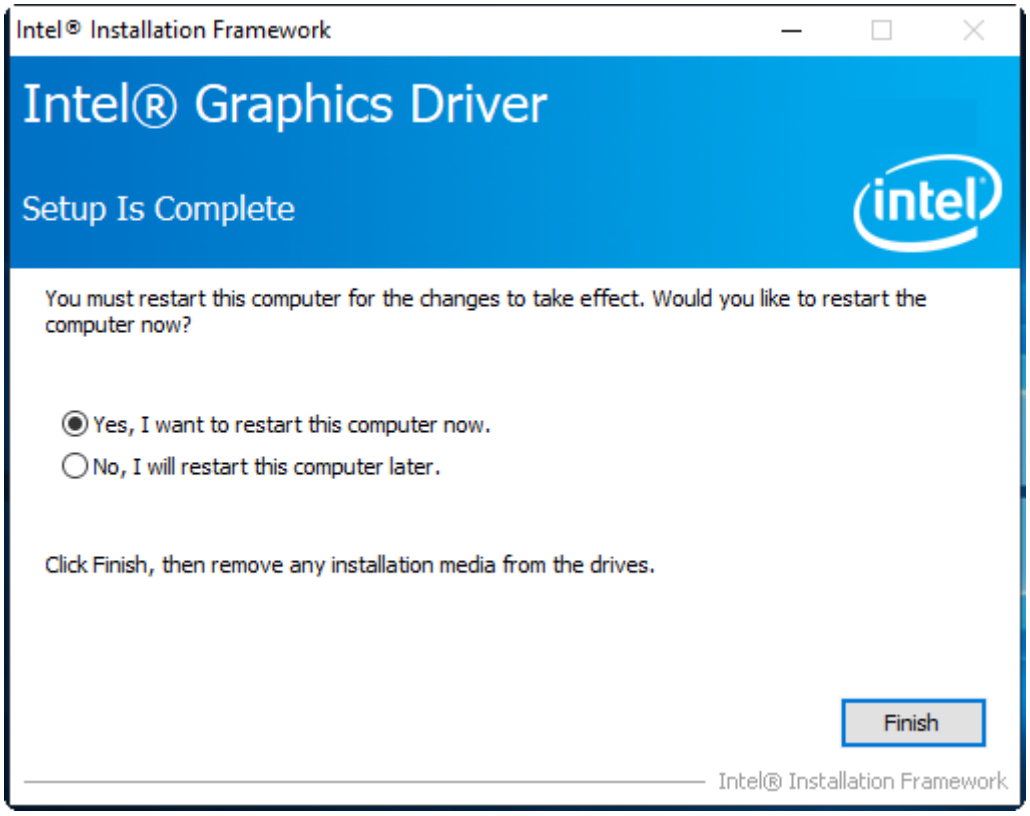
Step 4. Click **Next** to continue.



Step 5. Click **Next** to continue.



Step 6. Select **Yes, I want to restart this computer now**. Click **Finish** to complete installation.



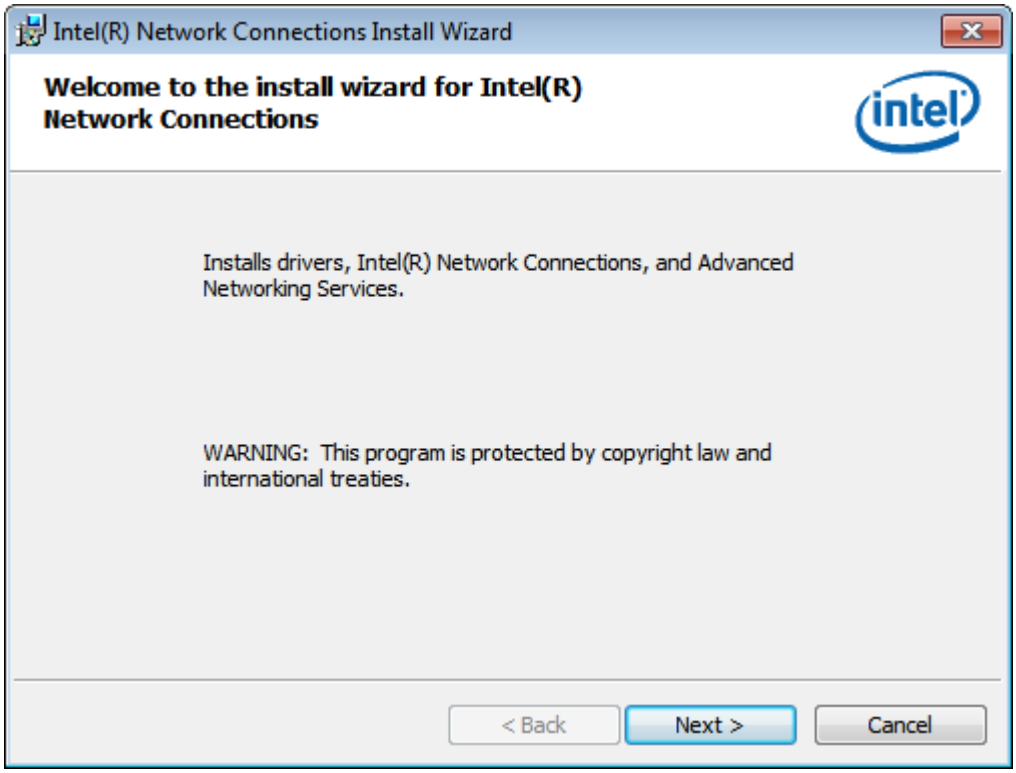
4.3 Intel® I210 LAN Driver

To install Intel® I210 LAN Driver Driver, please follow the steps below.

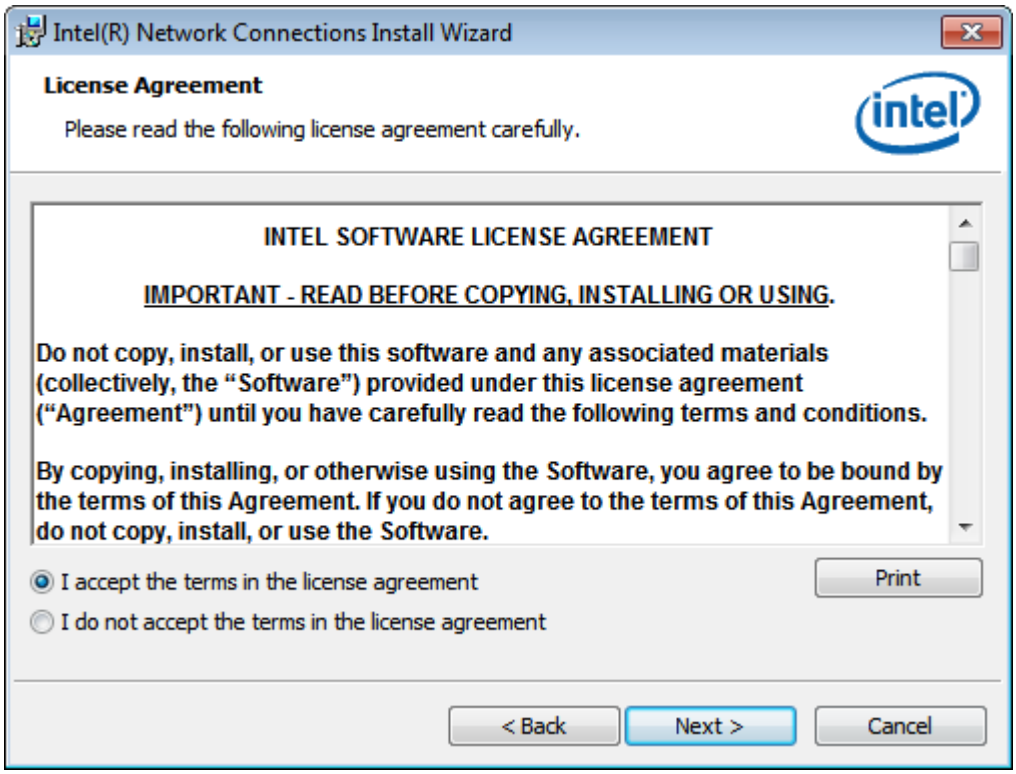
Step 1. Select **Intel® I210 LAN Driver** from the list

Step 2. Intel® Network Connections appear. Click **Install Drivers and Software.**

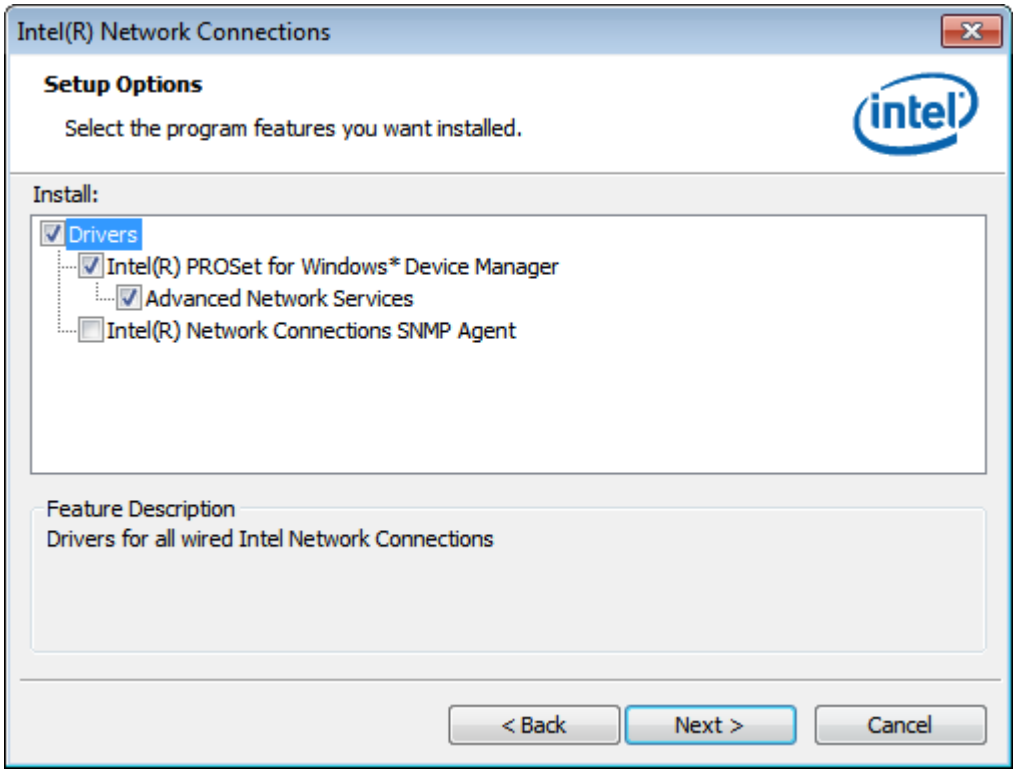
Step 3. Enter into **Install Wizard** welcome page. Click **Next** to continue**.**



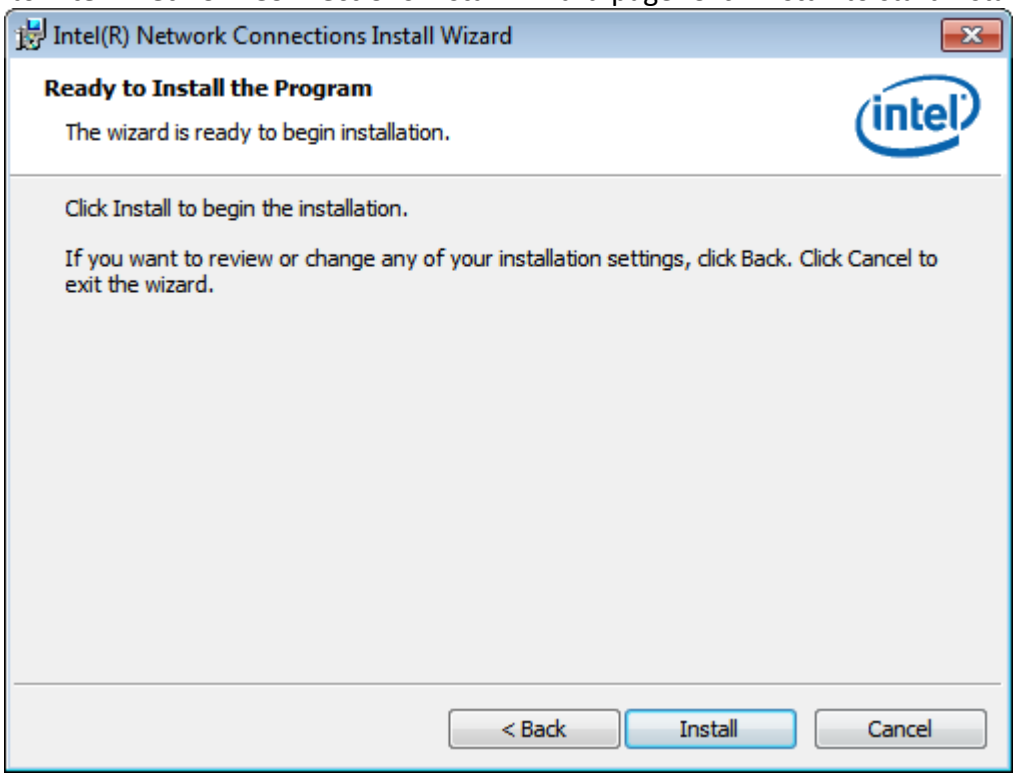
Step 4. Enter into **Intel® Network Connections License Agreement** welcome page. Click **Next** to continue**.**



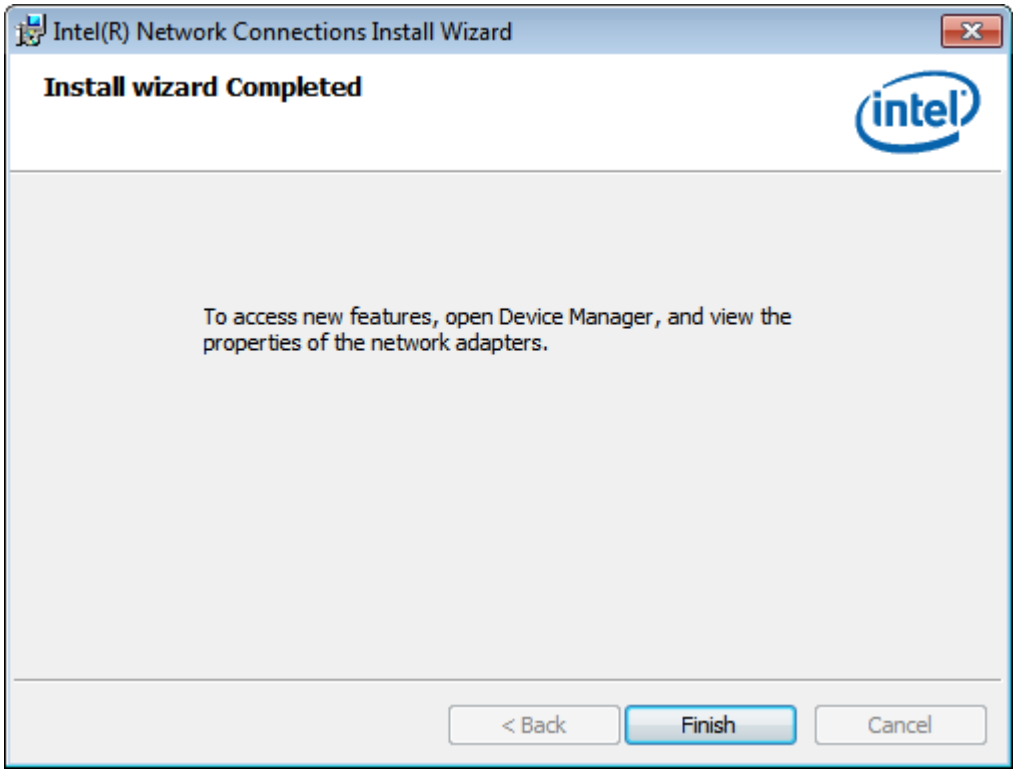
Step 5. Enter into **Intel® Network Connections Setup Options** page and choose as example. Click **Next** to continue**.**



Step 6. Enter into **Intel® Network Connections Install Wizard** page. Click **Install** to start installation**.**



Step 7. Click **Finish** to end your installation**.**

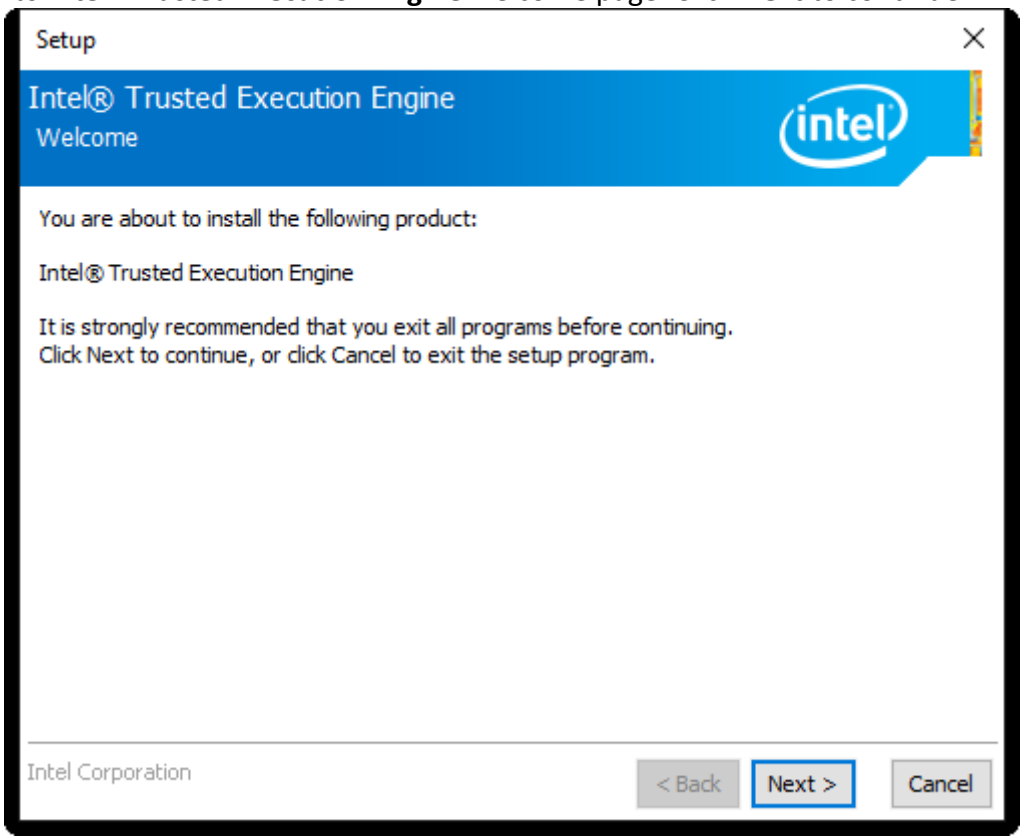


4.4 Intel® TXE Driver

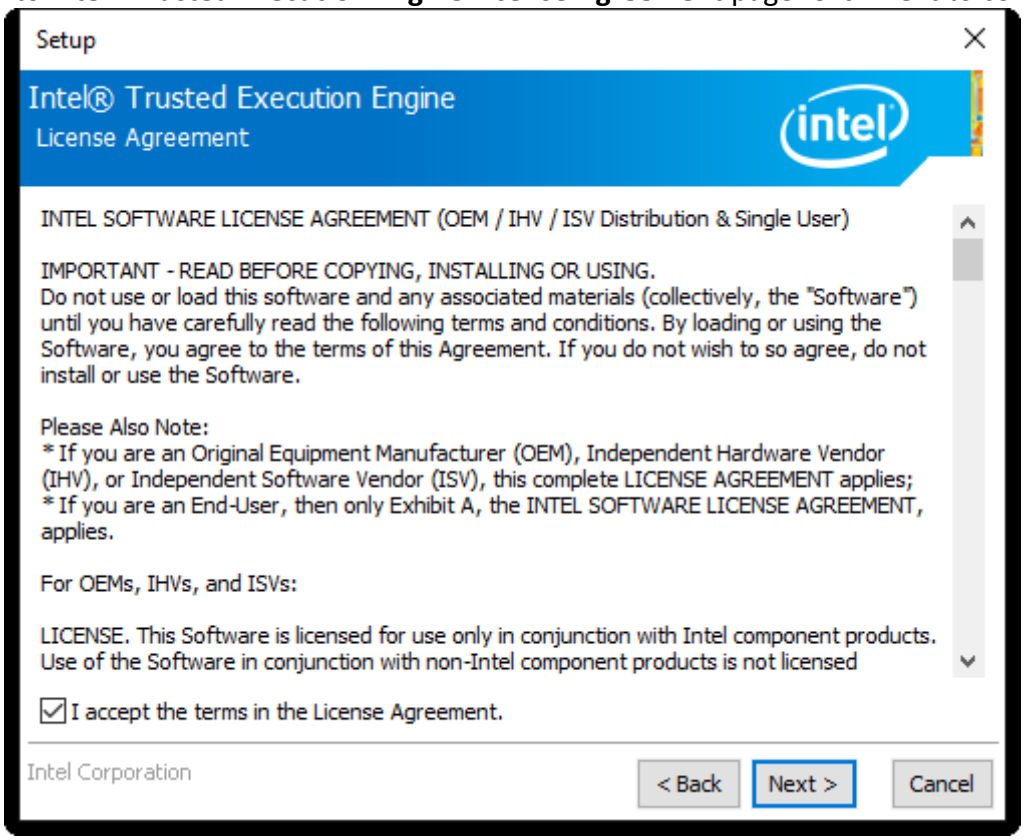
To install Intel® TXE, please follow the steps below.

Step 1. Select **Intel® TXE** from the list

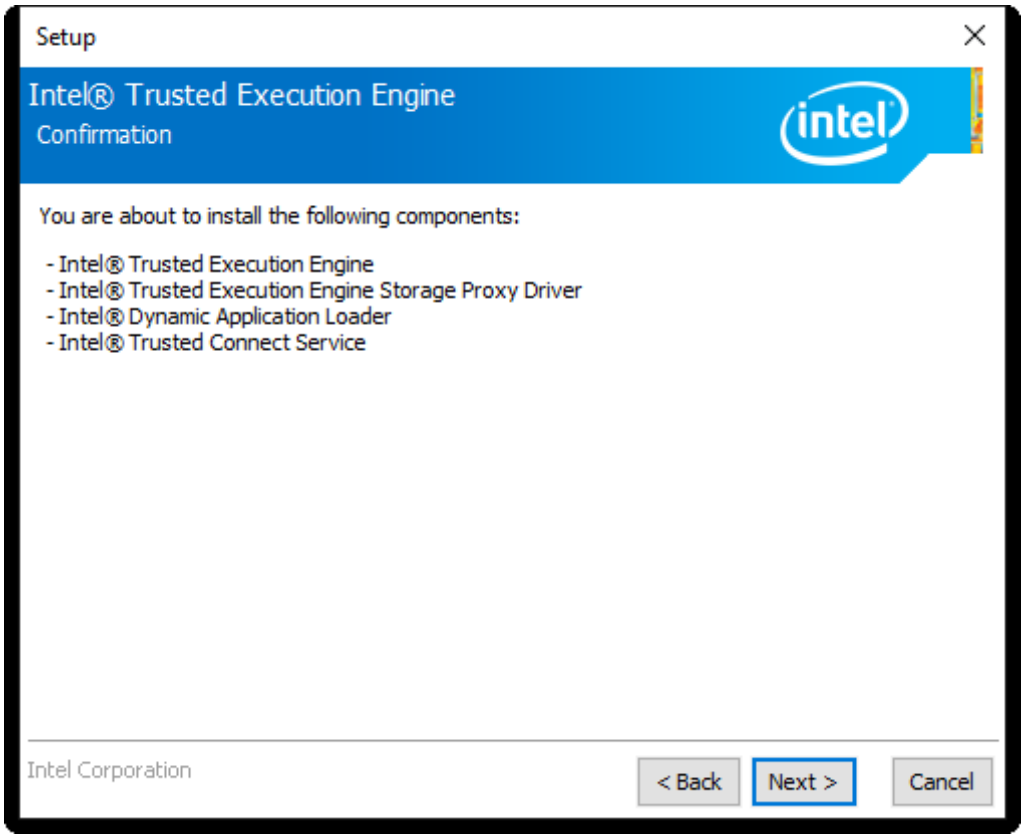
Step 2. Enter into **Intel® Trusted Execution Engine** welcome page. Click **Next** to continue.



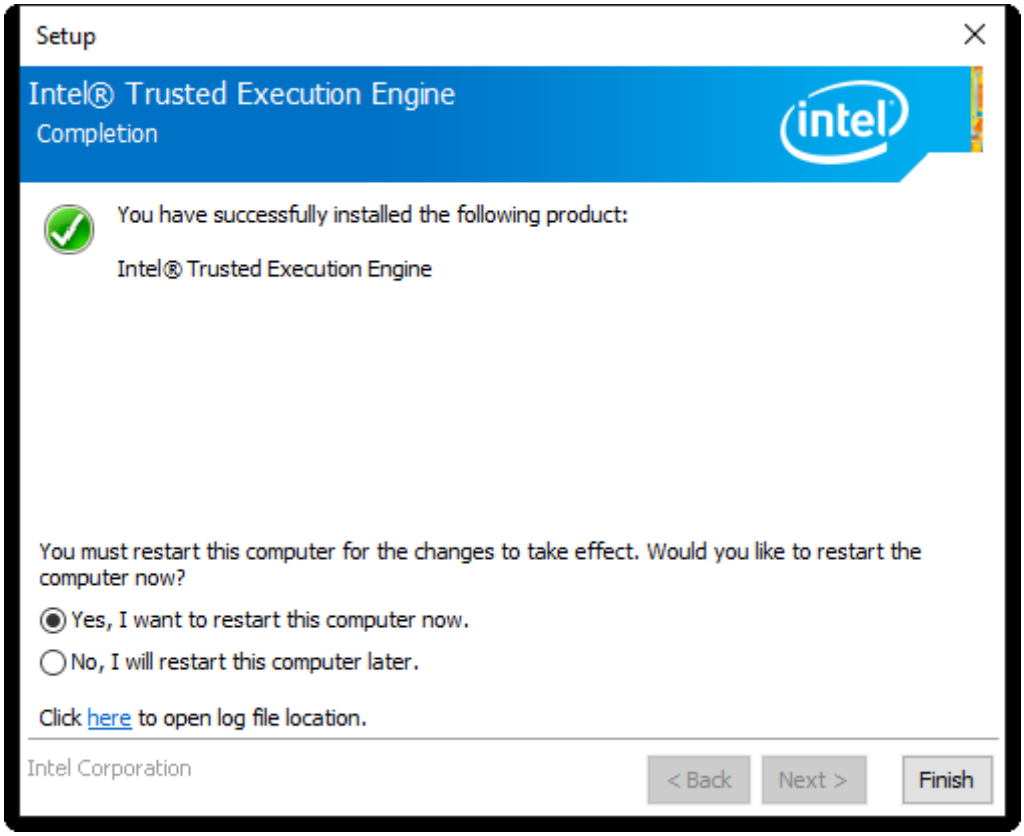
Step 3. Enter into **Intel® Trusted Execution Engine License Agreement** page. Click **Next** to continue.



Step 4. Click **Next** to continue.



Step 5. Choose **Yes, I want to restart this computer now** to finish the installation.

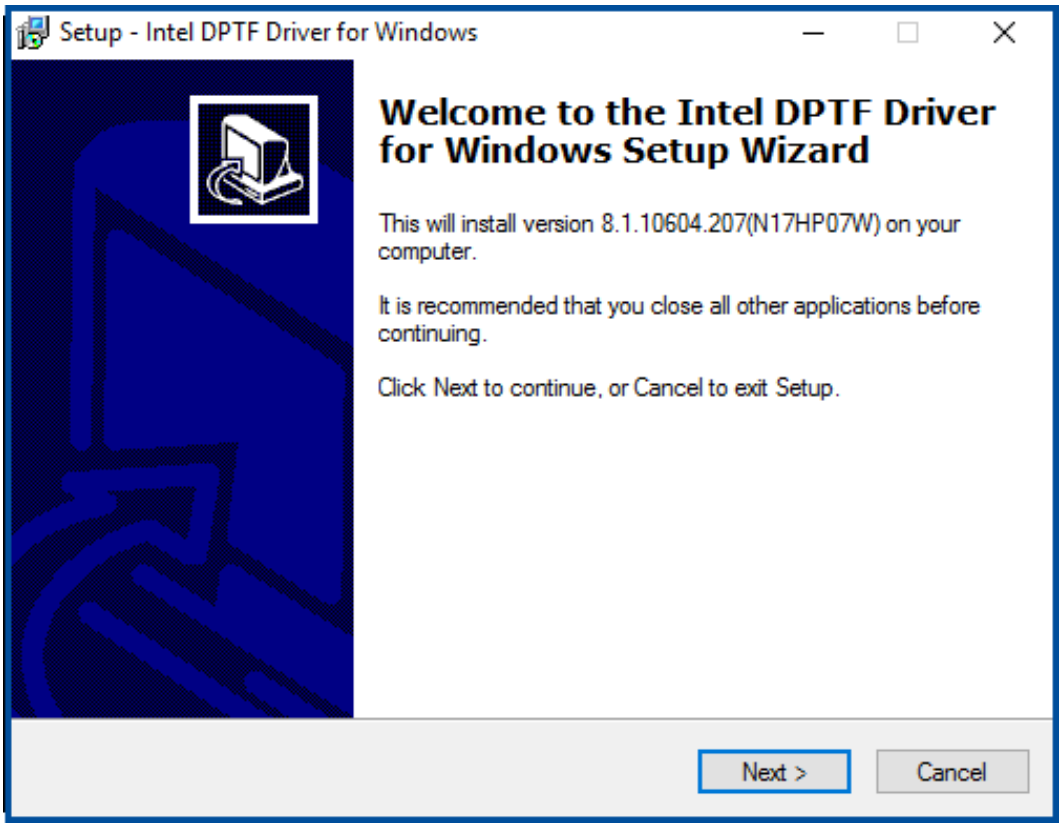


4.5 Intel DPTF Driver

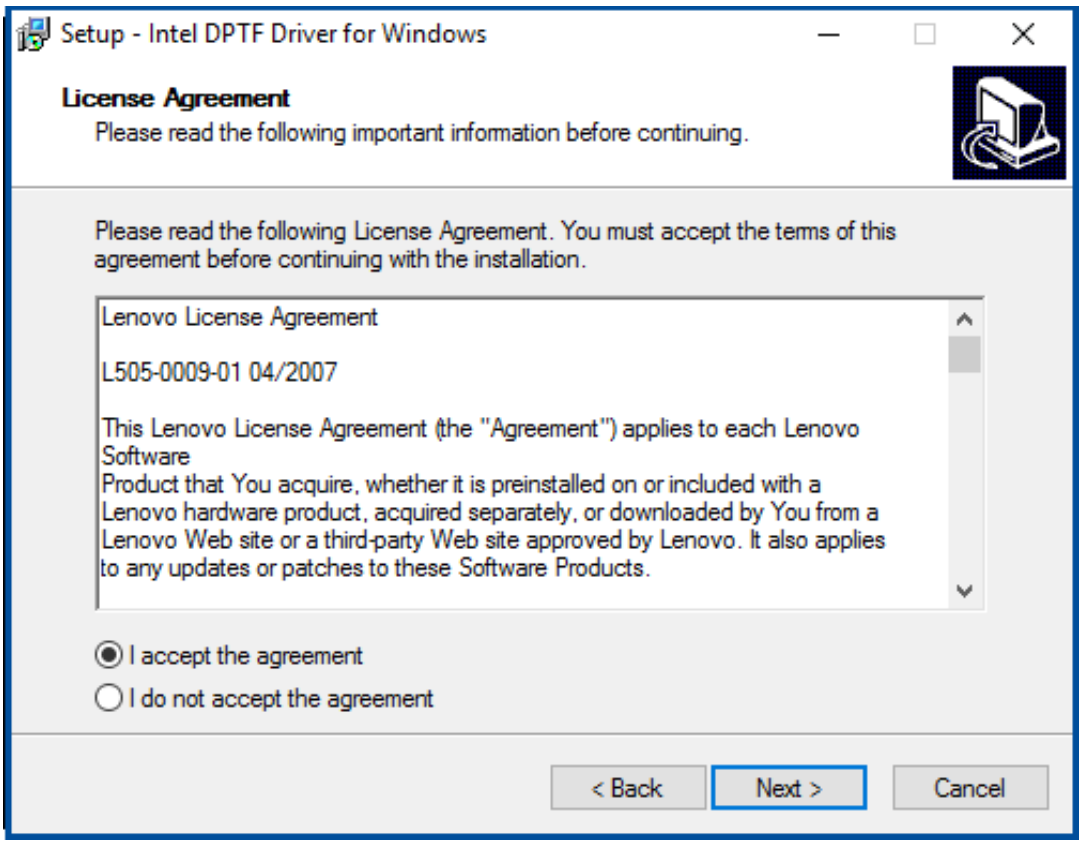
To install DPTF Driver, please follow the steps below.

Step 1. Select **DPTF Driver** from the list

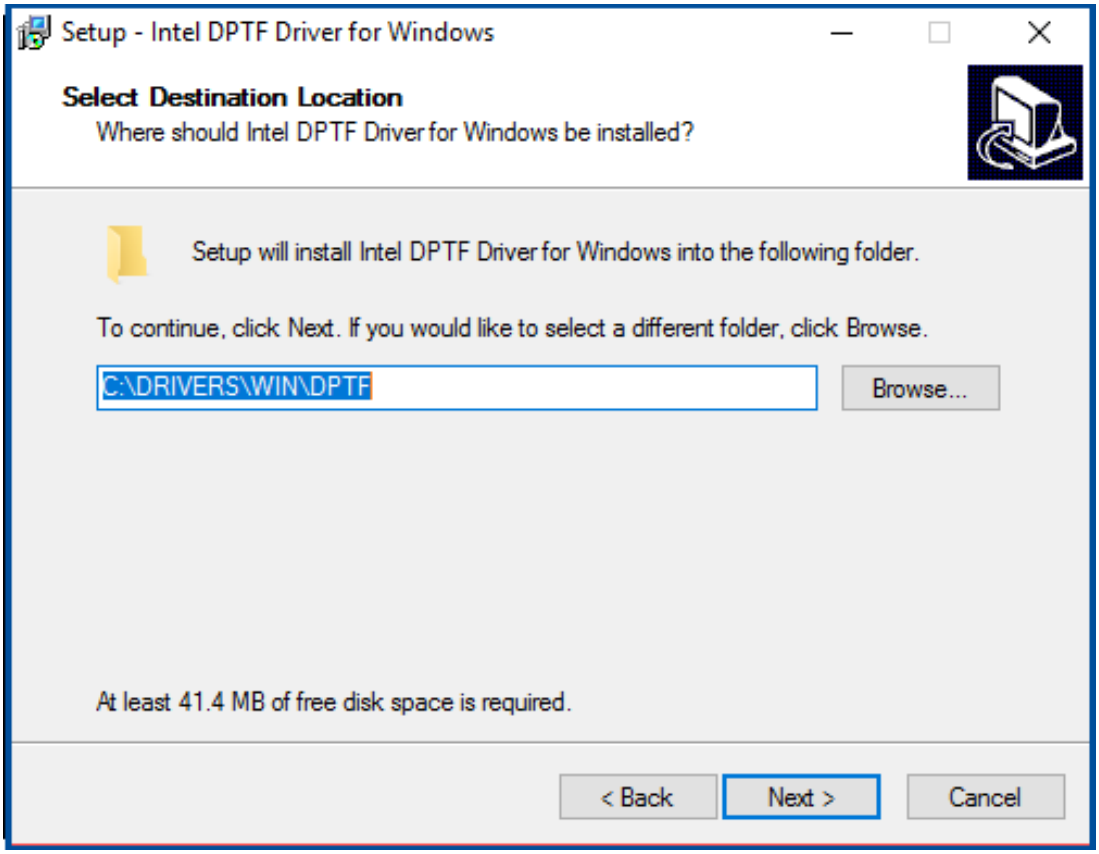
Step 2. Click **Next** to continue.



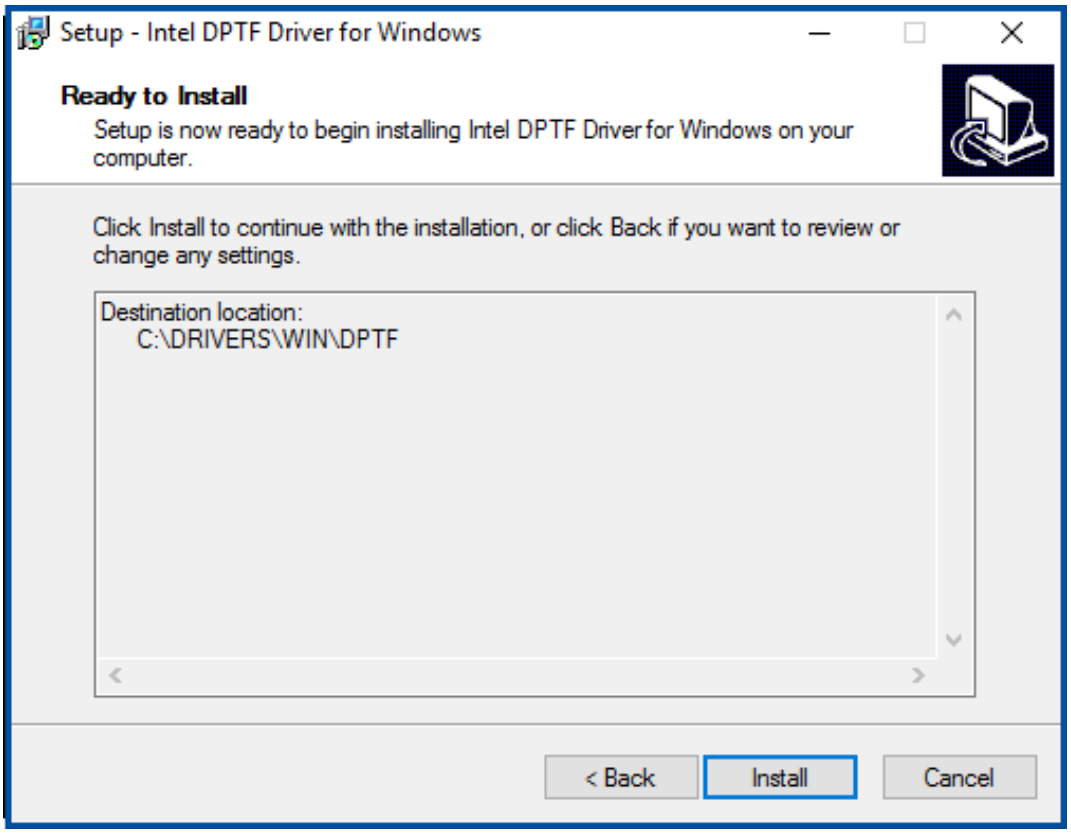
Step 3. Read the license agreement. Choose **Accept** and click **Next** to accept all of the terms of the license agreement.



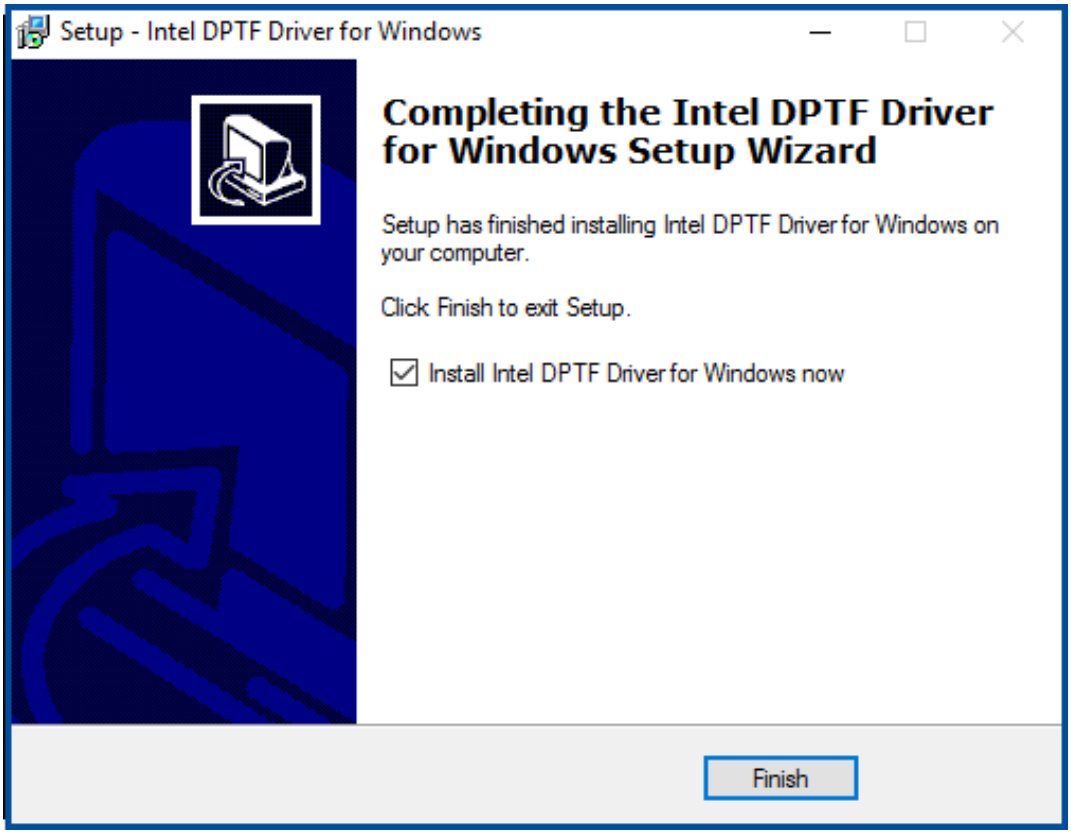
Step 4. Select destination location by your option and click **Next** to continue.



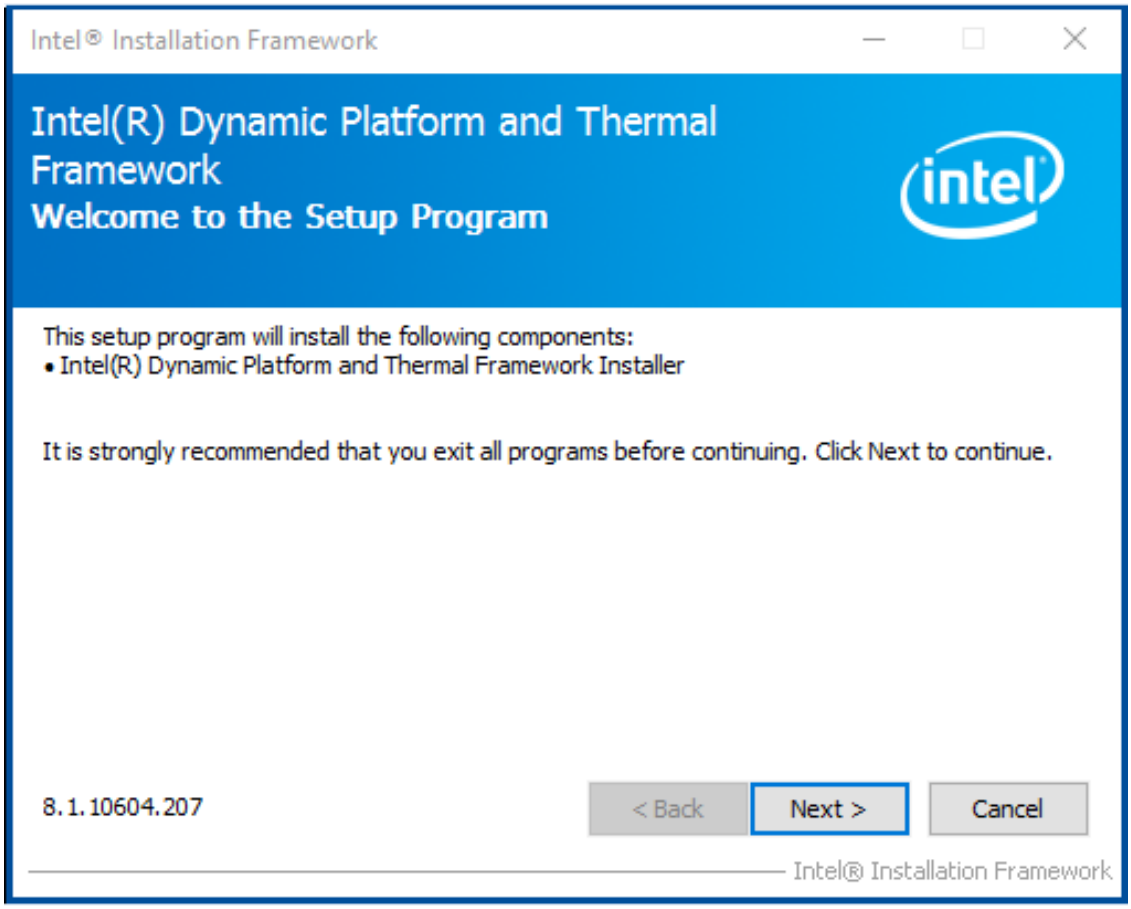
Step 5. Click **Install** to continue the installing.



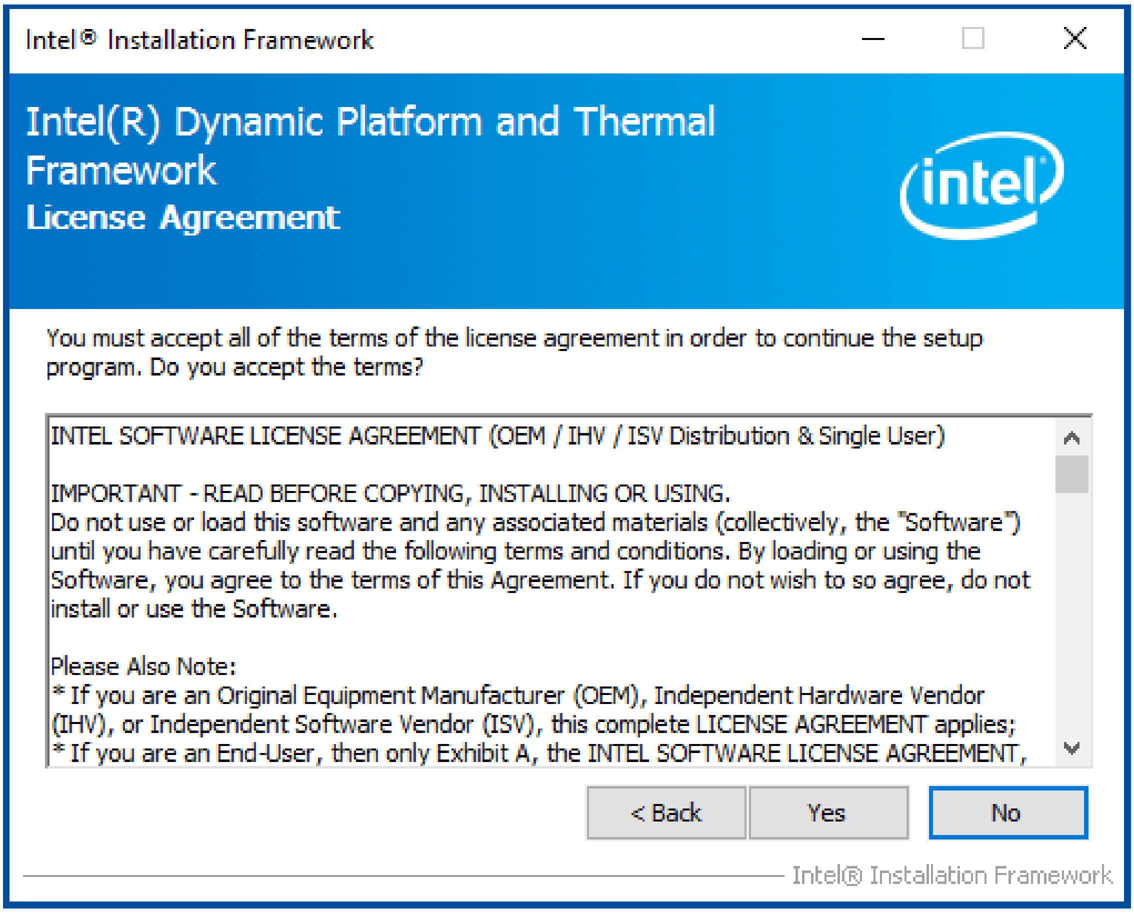
Step 6. Click **Finish** to complete the installation and start install Intel DPTF driver for Windows.



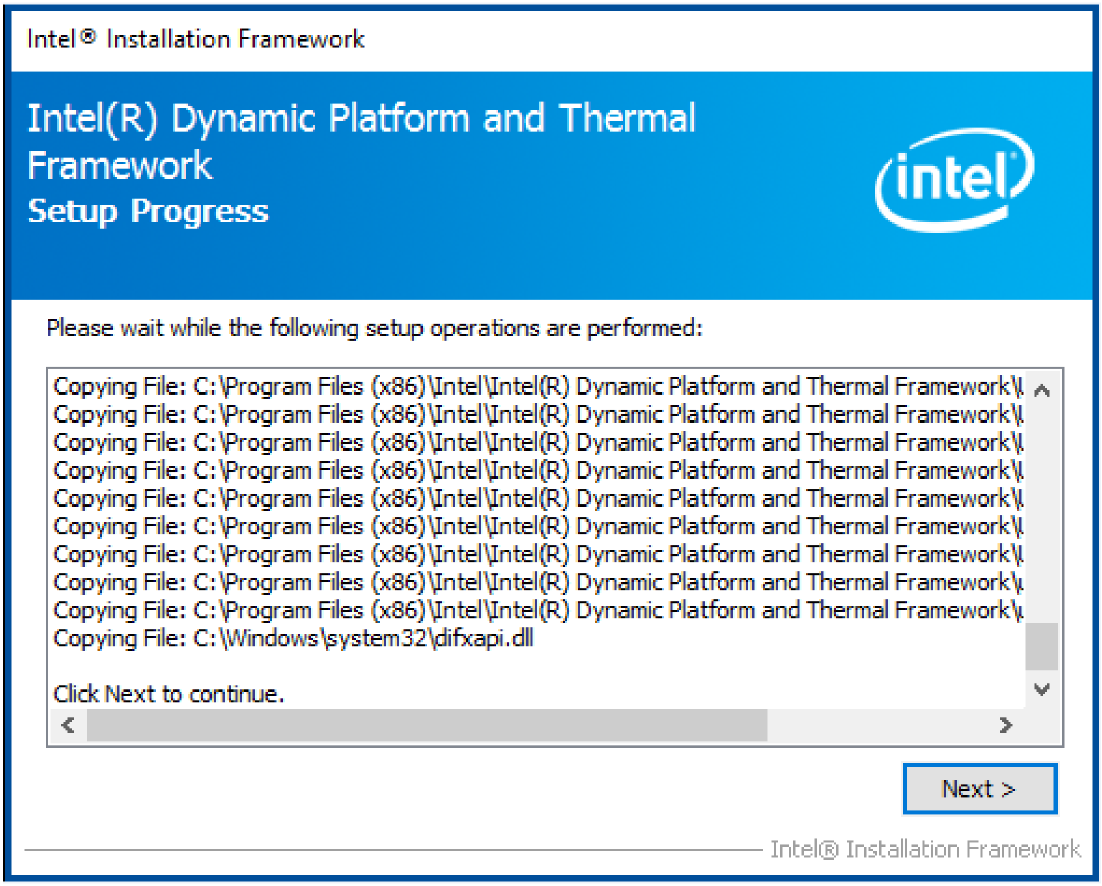
Step 7. Click **Next** to start the installation.



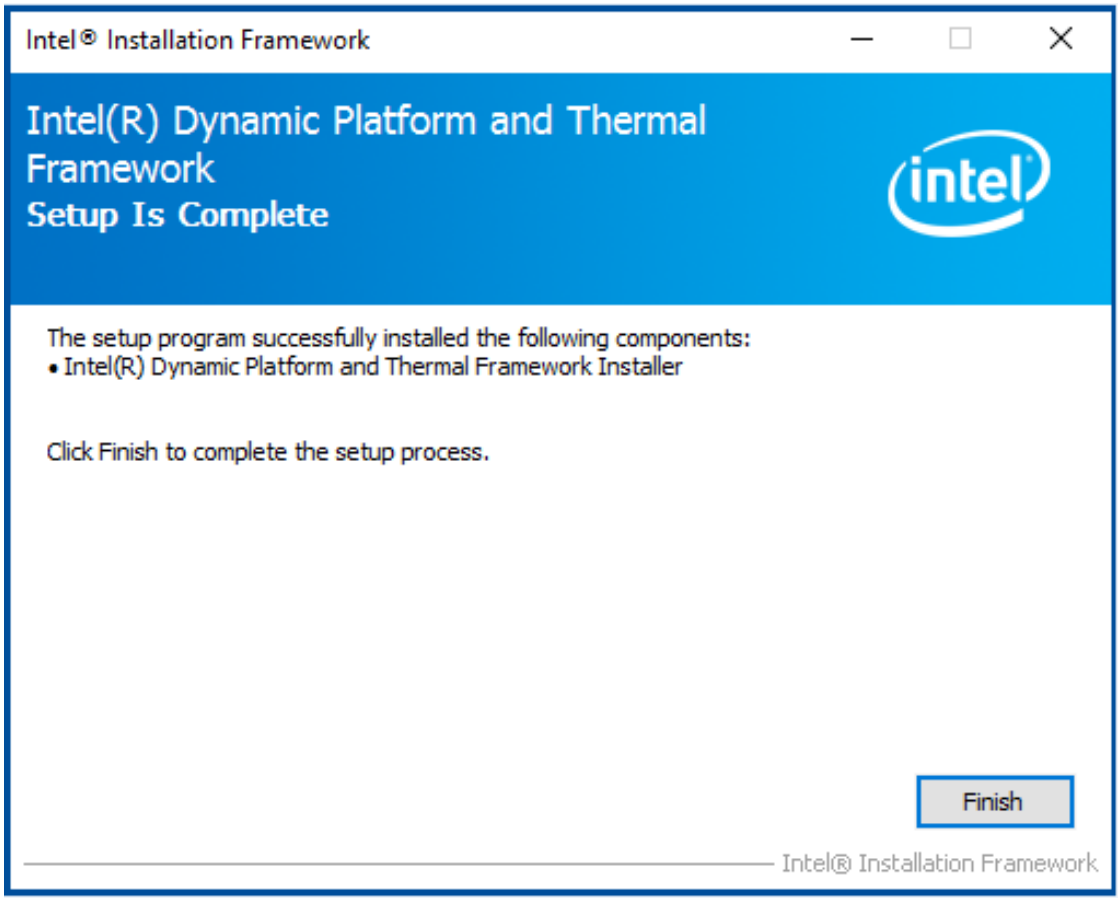
Step 8. Read the license agreement. Click **Yes** to accept all of the terms of the license agreement.



Step 9. Click **Next** to continues.



Step 10. Click **Finish** to complete the installation.



Chapter 5 Mounting Suggestions

5.1 DIN-rail Mount + Wall Mount

TITAN-300 is compound mounting design with Din-Rail kit and wall mount kit as picture below.

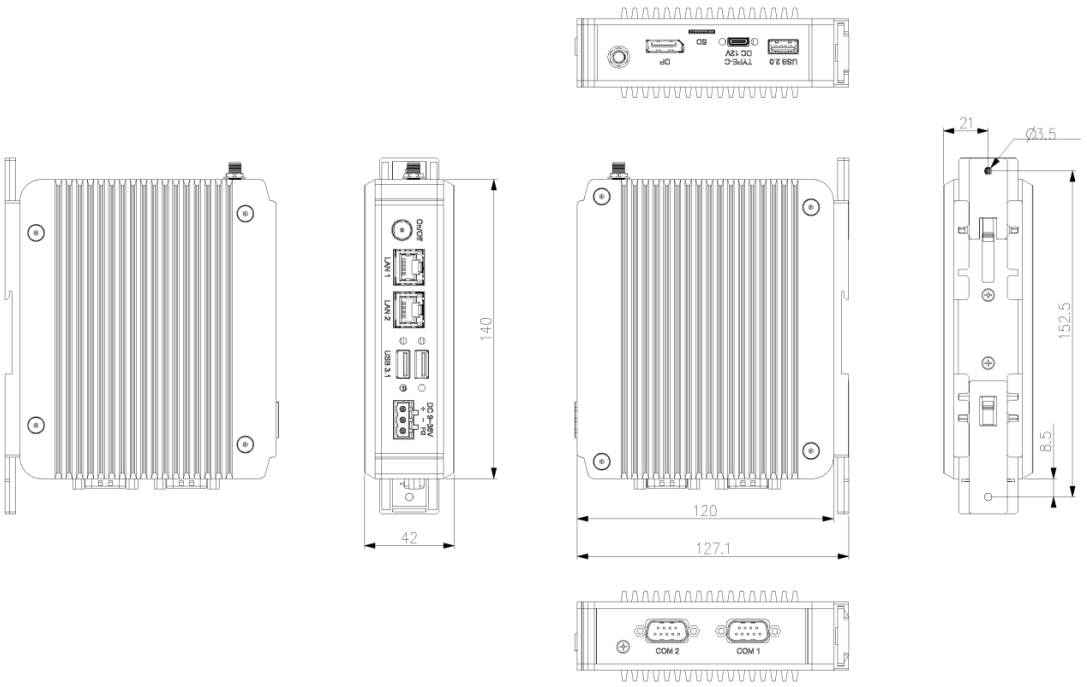


Figure 5.1 Din Rail Mount and Wall Mount of TITAN-300